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EDISON ELECTRIC INSTITUTE BULLETIN

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PUBLISHED MONTHLY BY EDISON ELECTRIC INSTITUTE

ELECTRICAL RESEARCH STATISTICS
THE ELECTRIC LIGHT AND POWER INDUSTRY

Current Statistical Data Covering 100 Per Cent of Industry

September, 1946-1947

SOURCE AND DISPOSAL OF ENERGY (In Kilowatthours)—MONTH OF SEPTEMBER

	1947	1946	%
GENERATION* (Net)			
By Fuel Burning Plants	15,874,740,000	13,169,032,000	+20.5
By Water Power Plants	5,606,145,000	5,635,807,000	− 0.5
Total Generation	**21,480,885,000**	**18,804,839,000**	**+14.2**
Add—Net Imports Over International Boundaries	93,435,000	134,371,000	−30.5
Less—Company Use	120,775,000	119,475,000	+ 1.1
Less—Energy Used by Producer	378,258,000	333,632,000	.....
Net Energy for Distribution	**21,075,287,000**	**18,486,103,000**	**+14.0**
Losses and Unaccounted for	2,579,591,000	2,128,579,000	+21.2
Sales to Ultimate Customers	**18,495,696,000**	**16,357,524,000**	**+13.1**

CLASSIFICATION OF SALES

NUMBER OF CUSTOMERS—As of September 30th			
Residential or Domestic	31,155,849	29,376,191	+ 6.1
Rural (Distinct Rural Rates)	1,477,931	1,340,523	+10.3
Commercial or Industrial:			
Small Light and Power	4,917,665	4,635,900	+ 6.2
Large Light and Power	189,260	174,117	
Other Customers	132,552	120,590	+ 9.9
Total Ultimate Customers	**37,873,257**	**35,647,321**	**+ 6.2**
KILOWATTHOUR SALES—During Month of September			
Residential or Domestic	3,511,847,000	3,017,606,000	+16.4
Rural (Distinct Rural Rates)	607,337,000	488,671,000	+24.3
Commercial or Industrial:			
Small Light and Power	3,406 374,000	2,825,206,000	+20.6
Large Light and Power	9,724,471,000	8,799,652,000	+10.5
Street and Highway Lighting	192,572,000	183,880,000	+ 4.7
Other Public Authorities	490,200,000	455,407,000	+ 7.6
Railways and Railroads:			
Street and Interurban Railways	318,596,000	336,160,000	− 5.2
Electrified Steam Railroads	198,955,000	200,967,000	− 1.0
Interdepartmental	45,344,000	49,975,000	− 9.3
Total to Ultimate Customers	**18,495,696,000**	**16,357,524,000**	**+13.1**
Revenue from Ultimate Customers	**$325,639,000**	**$288,151,300**	**+13.0**

RESIDENTIAL OR DOMESTIC SERVICE

AVERAGE CUSTOMER DATA—for 12 months ended September 30, 1947			
Kilowatthours per Customer	1,409	1,306	+ 7.9
Average Annual Bill	$43.82	$42.71	+ 2.6
Revenue per Kilowatthour	3.11¢	3.27¢	− 4.9

(*) By courtesy of the Federal Power Commission.

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EDISON ELECTRIC INSTITUTE BULLETIN

Volume 15 DECEMBER, 1947 No. 12

The Electric Light and Power Industry in 1947

Electric Utilities Have Record Year: 305 Billion Kwhr U. S. Total Output; 2 Million New Customers. 1947 Sees Start of $6 Billion Expansion Program

by Charles E. Oakes

President, Edison Electric Institute

HIGHLIGHTS of 1947 in the electric utility industry were the heavy growth of power consumption, a record increase in the number of customers, the successful meeting of increased power demand without serious difficulty, and the sharp rise in the last quarter of the year of deliveries of generating equipment from the manufacturers in quantities exceeding the rate of growth of power consumption.

Of long-term, far-reaching import was the beginning of a 5-year construction program to keep ahead of the enormously expanding load growth, and re-establish normal reserves of generating capacity which had been depleted by the long diversion of electric manufacture to war needs.

Total output of electricity from all generating sources in the country passed 305 billion kwhr, 25 billion above electricity output in 1944, the greatest of any previous year and 13 per cent above 1946.

Over 2 million new customers came on the power lines in 1947, making the largest increase in any one year of the industry's history. Since V-J Day more than 4½ million new customers have been added. Supply of construction materials has improved and the backlog of customers awaiting service has been sharply reduced. The total number of customers at the end of 1947 was approximately 38,400,000.

About 500,000 additional farms were added to power lines during the year, bringing the total to over 3,800,000 farms served with electricity, or 68 per cent of the nation's occupied farms. Another 14 per cent are located on power lines, but not yet taking service, thereby making service available to 82 per cent of occupied farms. About 95 per cent of the occupied homes of America now have electricity available to them and 92 per cent are taking the service.

Huge Construction Program in Progress

The delivery of generating equipment for power stations was resumed in volume in 1947. Manufacture of this equipment had been diverted by the War Production Board to war purposes until a few weeks before V-J Day. Since that time, except for a few months' work lost in strikes, orders for equipment have fully loaded the capacity of manufacturing establishments. About 2.8 million kw of generating capacity was delivered by manufacturers in 1947, the greater part of it in the last 6 months. The rate of delivery in the last quarter of the year began to outdistance the rate of growth of power consumption.

Approximately 2 million kw were installed and operating by the year's end. The growth of load on utility systems, however, during 1947 was approximately 4 million kw. This narrowed the margin of spare and reserve capacity from 5,300,000 kw at the end of 1946 to approximately 3½ million at the end of 1947.

In 1948 expected additions to generating capacity exceed 5 million kw against an expected increased demand in that year of about 3½ million kw. These additions will materially improve the margin of reserves but will still leave in many sections of the country a closer margin than desired.

Generating facilities of the business-managed electric companies will be increased during the next 4 years by 35 per cent through a long-planned construction program which got under full headway during the latter half of 1947. Some equipment orders covered by this program were placed as long ago as 1941. The program will entail expenditures of approximately $6 billion and add another 15 million kw of generating capacity by the end of 1951 to the lines of the business-managed companies. This increase alone represents 5 million kw more new generating capacity than is installed in all the governmentally owned plants in the United States. The program is designed to keep ahead of estimated load growth and to re-establish by 1951 a normal reserve margin.

Additional construction by governmentally owned power projects will bring total new construction of all electricity producers to more than 17 million kw of capacity within the next 4 years.

Construction expenditures for 1947 were approximately $1,400,000,000 and are expected to total more than $1,750,000,000 in 1948. These construction expenditures cover not only generating stations but transmission lines and distribution facilities to serve the record number of customers being added. The war period had sharply limited line extensions, damming up a huge demand for service. In 2½ years, facilities for servicing 4½ million new customers

were installed. It required 33 years, the first half of the industry's history, to attain customers totaling this number.

Generating facilities in the United States at the end of 1947 total 65 million kw. Of this total, the business-managed electric utilities have 42 million kw. Governmentally owned systems account for 10 million and industrial plants, street railways and miscellaneous establishments account for an additional 13 million kw.

Electricity Production

Production of electricity during the year was divided approximately as follows:

By business-managed electric companies, 204 billion kwhr

By governmentally owned systems, 50 billion kwhr

By industrial plants, street railways and miscellaneous producers, 51 billion kwhr, for their own use.

Sales of Electricity

Total sales of electricity by all utility enterprises, both company and governmental, approximated 216 billion kwhr, a 12-months' increase of 13 per cent above the 1946 year. The largest growth was in the residential and commercial classifications, both up 15 per cent. Industrial use remained at a fairly constant level throughout the year.

Record Increase in Household Use

Average annual residential consumption of electricity increased 106 kwhr per customer over 1946 to set an all-time high national average of 1,435 kwhr. This figure in 1937 was 805 kwhr. In 1927 it was 446, and in 1917 it was 268. New consumption records were set by all major classes of consumers except industrial customers and even these approached their wartime peaks.

Average annual farm use rose in 1947 to about 1,800 kwhr per customer. Commercial customer use reached a new high of approximately 7,500 kwhr per customer.

Lower Average Price

Increased sales again caused the electric industry to show a decline in the average price of electricity to the residential consumer, despite rising costs of labor, of fuel and of other items entering into the production cost of electricity. Revenue from electricity sales to householders averaged 3.06 cents per kwhr at the end of 1947. In December 1946 it was 3.22 cents. In 1937 it was 4.30 cents.

Revenues

Gross revenues of the business-managed electric power companies increased over 1946 by $338 million, or 10 per cent, to a new record high of $3,465,000,000 for 1947. This gain, however, was absorbed by increased expenses. Net income for 1947 available for dividends and surplus will be practically the same as last year it is estimated, which was $650 million. Dividends of $472 million were paid out in 1947 as against $467 million in the previous year.

Payrolls now constitute the largest item of expense, having grown from $603 million to $710 million in 1947, or by $107 million. This represents an increase of 18 per cent. Next in line are taxes, which increased from $639 million in 1946 to $655 million in 1947. Fuel showed the largest relative increase in cost due in part to a 22 per cent gain in the amount of fuel burned and in part to the rise in price of coal or its equivalent in other fuels from an average of $4.89 per ton in 1946 to over $6 at the end of 1947. The total fuel bill was $604 million in 1947 as compared with $427 million the year before, an increase of $177 million, or 41 per cent during the year.

Municipal Ownership

The trend which has been in evidence the past few years against public ownership of electric power systems continued during 1947. A smaller percentage of elections favored municipal ownership than in any year since 1936. Localities which favored public ownership contained less than 1 per cent of the total population of the areas in which the question was voted upon in the first 11 months of the year. This was a new low.

Outlook for 1948

The continued high rate of sales of electric appliances, the completion of new factories and the increase of homes, particularly in certain sections of the country, indicate a continued high rate of expansion in use of electricity in the coming year. The electric companies estimate a 7.2 per cent growth of load average for the country with some areas estimating double that percentage. The percentage of reserves for the country as a whole is expected to increase from about 5 per cent to about 8 per cent. Some areas, however, are expected to continue to be hard pressed for generating capacity during the summer peak load season and possibly a few will be short of reserves in December.

Detroit Edison to Complete Farm Electrification This Year

"BY June 1948, all of the 39,000 farms in the 7600 square miles of territory served by The Detroit Edison Company, will have available the many benefits of central station electric service," according to a statement by Angus D. McLay, vice-president. "This will mark the completion of a rural electrification program which the company embarked upon in 1923," Mr. McLay said, and added that, "The Detroit Edison Company is probably the first public service company in the United States serving an extensive rural area to make electricity available to all farm customers in its territory. Mr. McLay pointed out that "the company's farm service extension program had to be curtailed during the war because of material and manpower shortages. However, this whole program will be completed in 1948 and the company will then have 10,171 miles of power lines in operation to provide electric service to farms."

"Completing the extension of electric power lines to all farms in the territory at the middle of 1948 will not mark an end to the company's activities in the farm field but rather the beginning of an intensive program to expand the uses of electricity on the farm. Farmers are assisted in selecting economical application of electricity for their operations by a staff of experienced and specially trained Detroit Edison farm representatives who work with and assist the farmer without charge. Increased use of electricity on farms will mean increased efficiency, more profits and more leisure for the farmer and his helpers," Mr. McLay added.

Effect of Restrictive Electrical Codes And Ordinances on Building Costs

By Albert F. Metz

President of the Chamber of Commerce, Passaic, N. J.

Testimony before the Congressional Housing Subcommittee of the Committee on Education and Labor, held in New York, N. Y., on November 14, 1947

THE purpose of this testimony is to inform the Housing Subcommittee of the Committee on Education and Labor of the general effect on electrical installation costs of restrictive installation requirements incorporated into electrical installation codes and ordinances, and to cite, as an example, the requirements of the Electrical Code issued by the city of Paterson, New Jersey, and contemplated for incorporation into the electrical codes of other New Jersey municipalities, including the city of Passaic.

Conclusions

1. Electrical inspection laws and ordinances are generally recognized as desirable for the purpose of safeguarding the public.

2. The National Electrical Code is generally recognized as providing acceptable standards to serve the public interest by providing practical standards for the safe installation and use of electrical equipment.

3. Municipal ordinances and codes such as those discussed in this report that contain requirements which are more restrictive as to methods and materials for the installation and use of electrical equipment than those of the National Electrical Code have the effect of increasing unduly the cost to the public of electrical installations.

4. Such restrictive ordinances and codes which prohibit or unduly restrict the use of wiring materials and electrical equipment as recognized by the National Electrical Code constitute a form of boycott.

Introduction

The purpose of electrical inspection laws and ordinances is to protect the public from electrical hazards to persons and property. In order to fulfill this purpose, the law or ordinance, in addition to providing for proper administration, must require that electrical installations shall be in conformity with suitable standards developed to safeguard persons and property and to promote the public welfare. The National Electrical Code, an American Standard developed through democratic procedures by informed representatives of all branches of the electrical industry, provides these standards.

The National Electrical Code

The National Electrical Code is a widely accepted standard applied to inspection laws and ordinances. It covers the installation and use of electrical equipment in public and private premises with minor exceptions, not pertinent here, and is designed to provide for the practical safeguarding of persons and of property from electrical hazards arising from the use of electricity for light, heat, power, radio, signaling, and other purposes.

The National Electrical Code is formulated under the sponsorship of the National Fire Protection Association, a nonprofit, technical and educational membership organization dedicated to reduction of loss of life and property by fire. It is adopted as a standard by the National Board of Fire Underwriters. It is also submitted to and approved as an American Standard by the American Standards Association, an organization that is nationally and internationally recognized as the foremost agency in the United States for the development of industrial standards and safety codes, and whose procedure for such work requires that all parties in interest shall have an opportunity to have their views considered in the formulation of a standard or safety code.

The National Electrical Code is formulated and revised periodically by the Electrical Committee of the National Fire Protection Association. The same committee membership comprises the Sectional Committee on the National Electrical Code of the American Standards Association. This committee is composed of a balanced representation of the various interests in the development of the electrical art, particularly as regards methods and materials used in the wiring of homes, factories, commercial buildings and other structures of all kinds.

Represented on the Electrical Committee are:

(1) utility group
(2) manufacturing group
(3) insurance interest group
(4) governmental group
(5) inspection group
(6) specification and customer group
(7) installation group
(8) general interest group

Extent of Application of The National Electrical Code

The National Electrical Code is unique among safety codes in the wide acceptance and application it has had. In almost every state, county and municipality where electrical installations within its scope are regulated by law, the National Electrical Code is applied as the basis of the regulations enforced. It is also applied as a standard by the electrical inspectors of all fire underwriters' inspection bureaus.

This Code has been in the process of development for fifty years and represents the results of a vast amount of study, research and discussion by highly qualified and informed individuals. Its provisions are to a considerable extent influenced by the practical experience of electrical inspectors whose daily work is to enforce its requirements. Among the members of the electrical industry and those outside the industry who are well informed on such matters, the opinion is practically unanimous that in any law or ordinance regulating electrical installations to which the National Electrical Code applies, this Code should be recognized as the basic standard for such installations.

In practice, there are three methods of application of the National Electrical Code as the basic installation standard for local ordinances and codes:

1. The National Electrical Code is adopted either directly or by reference in its entirety.

2. The National Electrical Code is coordinated with building code or zoning law requirements, recognizing in the electrical ordinance the appropriate wiring materials and methods applicable to the building construction requirements of established fire zones.

3. The National Electrical Code is adopted directly or by reference, together with supplemental rules and regulations governing the installation and use of electrical equipment. It is the introduction of such supplemental rules and regulations in municipal codes and ordinances that often results in increased installation costs of electrical equipment.

Nature and Effect of Supplemental Rules

Supplemental rules which restrict or prohibit the use of wiring materials and electrical equipment, recognized as providing adequate safety by the National Electrical Code, constitute a form of boycott in that the ordinance is used as a tool in prohibiting or restricting the use of such materials. Such prohibitions or restrictions are for reasons not required by safety considerations, such as to provide more manhours of labor, or to restrict materials to those produced by a local manufacturer. Certain materials are thereby legislated out of the local market without due cause. Barriers are thus erected to a free and open market for nationally approved products which meet the requirements of the National Electrical Code and other recognized standards. Such barriers to free and open markets result in increased manufacturing and distribution costs which are ultimately reflected in increased costs to the public. Where such restrictions exist, low cost materials which can be generally installed with a minimum amount of labor are either prohibited or unduly restricted in their application.

Electrical Code for the City of Paterson, New Jersey

As a specific example of an electrical code containing such supplemental restrictive regulations, the Electrical Code for the City of Paterson, published with an effective date of Sept. 1, 1947, is used. Following protests from industry against the promulgation of this restrictive Code without public hearings, the Mayor of Paterson postponed the effective date of the Code to Jan. 1, 1948. Interested and affected groups of industry have been assured an opportunity to comment and register protest against the provisions of the Code before its final adoption.

My interest and concern over this code situation, which leads me to present this testimony, arises from information that this Paterson Code was developed by an organized group of electrical inspectors representing various New Jersey municipalities for promulgation as municipal codes in their respective cities, including the city of Passaic. As president of the Passaic Chamber of Commerce, a member of the New Jersey State Chamber of Commerce, and a member of the United States Chamber of Commerce, I am concerned from a local, state and national point of view that such restrictive codes and ordinances exist or may become effective.

The provision of this Code has been examined critically, and no justification for the restrictions can be found from either a safety or engineering viewpoint. Almost every one of the restrictive measures contained in this Code tends toward increasing the cost of electrical installation. Cumulatively, the effect is to impose a formidable economic barrier to the increased use of electrical energy. Added to today's already excessive building costs, the prospective homeowner, merchant and manufacturer is brought a step nearer to the "impossible" in acquiring necessary homes, stores and factories.

Actually, such restrictions may tend to increase hazards to persons and property. Postponement or abandonment of plans for adequate wiring installations because of unnecessarily costly wiring may not only deprive the public of desired heavy-duty electrical appliances, but may provide a hazard which would not otherwise exist by connecting these devices to present circuits inadequate for the purpose.

The city of Paterson is completely surrounded by municipalities, largely residential but containing varying amounts of industry. In general, streets divide the suburbs from the city of Paterson and from the adjacent city of Clifton, so that unless one knows the dividing streets, one may drive through several towns and through sections of the city of Paterson without knowing when the municipal boundary lines have been crossed. In all of the surrounding territory, electrical inspection is carried on by the Middle Department Rating Association of Fire Underwriters, an insurance inspection organization which uses the National Electrical Code in its entirety and without supplemental requirements as the standard for electrical installation. The behavior of electricity is not affected in any way by city or state boundaries; consequently, what constitutes a safe electrical installation in one town should also constitute a safe installation in the adjacent town or city.

In addition to the territory immediately surrounding Paterson, following are some of the areas in the State of New Jersey where the National Electrical Code is recognized as the electrical installation standard without modifications:

All of Bergen County—including the city of Hackensack
All of Hudson County—including the industrial cities of Jersey City, Bayonne, Kearny and Harrison
All of Passaic County—except Paterson—including the cities of Passaic and Clifton
Irvington—a heavily industrialized city
Montclair and the Oranges
All of the industrial area surrounding the cities of Newark and Elizabeth
The industrial city of Camden

Many of the cities and towns have industrial areas fully as large as those of Paterson together with at least comparable population concentrations.

Philadelphia Uses NEC

One of the outstanding cities in the country where the National Electrical Code is used as the electrical installation standard without supplemental requirements is the city of Philadelphia. And it might be noteworthy that Philadelphia is proud of one of the lowest fire loss records in the country.

This listing of areas and municipalities recognizing the National Electrical Code without restriction is obviously incomplete and, except for Philadelphia, is limited to areas located in New Jersey. With relatively few exceptions, the same situation exists throughout the country.

There are three low cost wiring methods recognized in the National Electrical Code that are suitable for use in buildings of wood-frame construction; these

are known as armored cable, nonmetallic sheathed cable, and knob and tube wiring. All three methods have been extensively used and have been proved to be entirely safe if properly installed. The Paterson Code prohibits the use of nonmetallic sheathed cable and places unnecessary restrictions on the use of the other two methods; thus we have a situation where recognized wiring methods and materials are permitted on one side of the street, and are prohibited on the other side of the street, with the same contractors doing the work in both cases.

The Paterson Code would prohibit the use of these inexpensive wiring methods in basements. To illustrate the practical effect of this prohibition, the power wiring for an oil burner, automatic gas or automatic coal stoker installation must be in metal conduit and the thermostat wiring must be of metal-clad construction instead of conventional control wiring. These requirements place a substantial installation cost barrier against the installation of such equipment.

Over a billion feet of nonmetallic sheathed cable is being installed throughout the United States each year in accordance with the provisions of the National Electrical Code. The installation of this material has been demonstrated as economical and safe. The public should not be deprived of the use of this wiring method. In addition, the Paterson Code requires that services that are run underground shall be placed in conduit. This prohibits the use of such recognized and safe economical material as nonmetal duct systems and of underground cable designed and approved for direct burial in the ground. Overhead service entrance conductors are required to be run in conduit, thus prohibiting an inexpensive method of installation using recognized service entrance cable, which is a much less expensive method and is probably the method which is being used today for services to the majority of dwellings and other small buildings. Here again, an unnecessary cost is added to the construction of dwellings and small commercial and industrial buildings.

Service facility requirements for large commercial and industrial installations and multiple-family dwellings are required to be unnecessarily complex with resulting additional expense, with no additional safety and with the possibility that individual tenants in dwellings and commercial buildings will be considerably inconvenienced.

COST COMPARISONS OF SOME ITEMS OF WIRING INSTALLATIONS ESTIMATED UNDER PROPOSED PATERSON ELECTRICAL CODE AS COMPARED WITH COST UNDER NATIONAL ELECTRICAL CODE

These costs apply to a six-room, single-family dwelling of wood-frame construction and include labor and material estimates only. No overhead or profits are included.

	N. E. Code			*Paterson Code*			*Total Dollar*	*Percent*
	Material	*Labor*	*Total*	*Material*	*Labor*	*Total*	*Increase*	*Increase*
1. Wiring for lighting in basement	7.03	6.50	13.53	14.69	18.00	32.69	19.16	141%
2. Service Entrance Wire	3.00	1.25	4.25	6.89	5.00	11.89	7.64	180%
3. Oil Burner Wiring	2.42	2.50	4.92	4.54	5.50	10.04	5.12	104%

ESTIMATED ADDITIONAL COST FOR SERVICE EQUIPMENT FOR A LARGE COMMERCIAL BUILDING OR INDUSTRIAL INSTALLATION UNDER THE PROPOSED PATERSON, N. J., ELECTRICAL CODE AS COMPARED WITH COST UNDER THE NATIONAL ELECTRICAL CODE

	Material	*Labor*	*Total*	*Total Dollar Increase*	*Total Percent Increase*
N. E. Code					
2—600 ampere switches	388.00	130.00	518.00		
Paterson Code					
1—1200-ampere circuit breaker, including labor for installation	935.00	80.00	1015.00	497.00	100%

While the dollar figures involved in this cost comparison are not staggering in magnitude, the percentage increase in cost is of extreme significance and country-wide such costs would run into substantial figures. Also of considerable significance is the estimated increase in labor required under the restrictive provisions of the Paterson Code for residential wiring.

In the sections of the Paterson Code devoted to the grounding of electrical equipment and systems there is a direct conflict with the corresponding provisions in the National Electrical Code. The chief purpose of the National Electrical Code section on grounding is to lessen the hazard of electric shock, particularly in auxiliary buildings in commercial and industrial occupancies and in out-buildings of farms and other occupancies. This subject has been studied by experts, and the resulting provisions in the National Electrical Code are recognized by those individuals who have given considerable attention to the subject of grounding as an important advancement in providing for the safety of persons working on or near electrical equipment located in auxiliary buildings, or out-buildings, of livestock in barns, and of the electrical equipment itself. It is not apparent that the provisions of the Paterson Code would have any advantage over those required by the National Electrical Code, and installations would cost considerably more. In some of the provisions of the Paterson Code it is believed by some experts that the hazards to persons and to equipment will be increased.

The Paterson Code contains a requirement that the non-current carrying metal parts of all portable electrical appliances and equipment be grounded, which is such a drastic departure from today's practice that it would be practically impossible to enforce. In order to bring about enforcement it would be necessary to require that every portable electrical appliance sold and installed in the city of Paterson be equipped with special conductor cords and attachment plugs with special receptacles provided in the homes for their use. It is obvious that such a requirement would be entirely impracticable and, according to some experts in the field, would in all probability increase the hazards rather than lessen them.

Only a few of the restrictive provisions of the Paterson Code are mentioned here; however, rather complete analyses have been prepared by representatives of industry and are available on request.

Cost Comparisons

To illustrate the effect of these restrictive Code provisions on the cost of wiring installations, a few cost comparisons of components of a residential installation and of a large commercial or industrial installation have been prepared by the estimator of a large electrical contractor in this area.

I noted in the November 9 issue of the New York *Times* that representatives of labor, testifying before the Joint Congressional Housing Committee in Chicago pointed out that although building construction costs have increased some 100 per cent or more since 1940, labor pay scales have increased only 25 per cent. The effect of the introduction of such regulations as these in increasing the number of hours required to make the installation is important. The increase in cost is a tangible incremental

increase in the total building cost in one specific city.

Not shown in these cost comparisons is the indirect effect of such restrictive codes on the manufacture and distribution of electrical equipment. If such restrictive codes were to become prevalent in many of the major cities in the United States, the combined factors of decrease in markets for certain materials and the increased resulting cost of distribution, handling and sale of special equipment would inevitably result in higher material cost to the customer.

All branches of the electrical industry are affected adversely by these restrictions: the electrical dealer—the wholesaler—the contractor—the electrician—the manufacturer of electrical equipment—and the electric utility. For example, to outline only a few specific cases . . .

The dealer will find difficulty in selling appliances, lamps and devices equipped with a grounding wire and a three-pronged attachment plug. Present approved appliances with conventional two-pronged plugs will be available in other communities and will not necessitate the rewiring of receptacles to accommodate them.

The wholesaler and the manufacturer will be confronted with an utterly confused situation. Materials cannot be distributed economically and special appliances and devices will be added to present stocks for use in the restricted territories. Recognized wiring materials such as nonmetallic sheathed cable and enameled conduit, boxes and cabinets will be legislated off the market.

While the contractor and the electrician may realize a larger income from an individual job, these restrictions will tend to reduce the number of heavy-duty appliances installed and eliminate the huge potential market of presently inadequately wired homes. It is indeed unfortunate to be priced out of the market for the consumer's dollar by such restrictions to free enterprise.

The utility companies are affected in two directions: barriers to increased use of electrical energy are erected, and the cost of service maintenance is increased.

In addition, automatic house-heating, air-conditioning, ventilating and other industries utilizing electrical energy are affected adversely by the unnecessary increase in installation costs.

Discussion

It is obvious that these adverse effects on the electrical industry as a whole can only result in increased costs to the public of electric service which is so vital to today's living. It is also evident that the safe and economic installation of electrical wiring and equipment can be assured through the uniform recognition of the National Electrical Code throughout the country.

Minimum Standard Explained

One of the reasons cited for the inclusion of special restrictive provisions in local electrical codes and ordinances is that the National Electrical Code is a "minimum standard." This generally results from a misconception of what is meant by the term "minimum standard." Perhaps the following may help to clarify this meaning:

A minimum standard is developed to accomplish a desired result satisfactorily. It adds no frills, gold plate or polish, but it does the job.

For example, consider a line of automobiles such as that of the General Motors. A Chevrolet may be considered as corresponding to a minimum standard of that line. It does all that is required of a car in the line of performance and safety and provides a reasonable degree of comfort and convenience. Varying degrees of performance, comfort, or luxury—if you will—are provided all the way up the line to the super-de-luxe Cadillac. However, the purchase of a Pontiac, Buick or Cadillac is a matter of personal choice, and the condition of the family exchequer. The public would not stand for a local ordinance prohibiting the sale and use of a Chevrolet or Ford or Plymouth which, after all, are "minimum standards" of their lines.

A zealous sense of responsibility on the part of some inspection authorities leads to the belief that it is their duty to provide what they consider maximum safety under all conditions of use of electrical energy. Generally supporting the electrical inspection authorities in formulating and promulgating special restrictive provisions for their codes and ordinances are the electrical contractor and labor groups. Occasionally, some of the dealers in electrical equipment and apparatus and some few individual manufacturers with selfish interests may join in support. Opposed to such forms of restrictions are the manufacturers of electrical products, the state and local manufacturers associations, state and local employers associations, chambers of commerce, building owners and managers associations, the public utilities and other groups and individuals who are affected adversely, with no compensating increase in safety to the public. All of these groups recognize the desirability of adequacy of electrical installations under certain circumstances to provide additional comfort, convenience or to provide facilities for future increases in use of electrical equipment, but are convinced that such additional facilities should be sold to the public and not legislated.

It is generally agreed by informed persons that fires and accidents result not from the use of recognized wiring materials and methods, but rather from their misuse. Adequate inspection procedures can assure the proper use of wiring materials and methods as recognized by the National Electrical Code and thereby assure the practical safeguarding of the public. The responsibility of these inspection authorities therefore appears to rest upon the adequacy of inspection to assure conformity with nationally recognized installation standards rather than upon the necessity for promulgating additional requirements. Where additional facilities, capacity or convenience is desired or deemed advisable, promotion—and not legislation—should be the means of accomplishing the desired result.

Phillips B. Shaw

PHILLIPS BASSETT SHAW, president of the Arizona Edison Company, Inc., since 1937, died November 10 in a Phoenix, Arizona, hospital, at the age of 52 years.

Mr. Shaw had been connected with public utilities since 1920 when he started his career at Summit, N. J. From 1923 to 1925 he was operating vice-president of the National Electric Power Company and affiliated companies. He then became vice-president and director of National Electric Power and then president of the North American Gas and Electric Company, from which post he came to Arizona.

From 1936 to 1943 Mr. Shaw was also managing director of the Ohio Service Holding Corporation and subsidiaries.

He was born in New York City and was graduated from Williams College in 1916. He left Columbia University Law School after one year to enter the Army as a second lieutenant of artillery on the entrance of the United States into World War I.

The Effect of Electric Appliance Prices on the Buying Public

By W. E. Saylor
Manager, Kelvinator Utility Division

An address presented before the General Sales Conference, Southeastern Electric Exchange at Atlanta, Georgia, on October 29, 1947.

IT has always been true, I believe, in this country, under our particular system of free enterprise, that people have continued to buy merchandise for which they have a need just so long as they were convinced that the price was fair for the quality offered. And, the reverse of that also is true—namely, that people stop buying a product when the price rises to a point where it outweighs its value to them.

Applying this thinking to today's situation in the appliance field, I think we would be justified in concluding that the buying public feels that appliances generally are not over-priced, because we have the situation of continued tremendous demand for practically all major appliances—taking the country as a whole. In fact, since the buying public continues to beset dealers for such products, it would seem logical to conclude that prices as they exist today must look very favorable to people generally.

Unit Production, 1941-1946

Of course, I realize that an objection to this line of thinking might logically be raised; namely, that the demand piled up during the war years was so tremendous, and the supply since then so pitifully small, that such a buyer's market is bound to exist. I would like to cover that subject here, in order that you may get a picture of the real situation.

The 1941 and 1946 unit production figures shown in Fig. 1 are drawn from *Electrical Merchandising,* issue of January 1, 1947, page 37, and the figures for 1947 are an estimate, based upon best industry figures available for eight months of 1947. We have used 1941 as the year for comparison because for most items shown here that year represents an all-time high in production and sale of these products. In that year, 3,500,000 electric refrigerators were produced; in 1946, a year which found dealers and public alike deploring the lack of this product, the industry managed to turn out 2,100,000 units; in 1947, with all figures not yet in, of course, the estimate is for 3,100,000 units.

PRODUCTION OF ELECTRICAL MERCHANDISE

	1941 UNITS	1946 UNITS	1947 UNITS
REFRIGERATORS	3,500,000	2,100,000	3,100,000
RANGES	728,000	544,000	1,000,000
WATER HEATERS	205,000	488,000	950,000
HOME FREEZERS		87,000	300,000
ELECTRIC IRONERS	260,000	175,000	500,000
ELECTRIC WASHERS	1,892,000	2,000,000	3,000,000
VACUUM CLEANERS	1,670,000	2,169,000	3,000,000
TOTAL	8,450,000	7,563,000	11,850,000

SOURCES:

Production of units for 1941 and 1946 from Electrical Merchandising, Jan. 1, 1947, Page 37; production of units for 1947 is an estimate based upon best industry figures available for 8 months of 1947.

Fig. 1—*Comparison of Unit Production of Electrical Merchandise for* 1941, 1946 *and an Estimate from the First Eight Months of* 1947

Going on down the list we see 728,000 ranges produced in 1941; 544,000 in 1946, and 1,000,000 estimated for 1947. Water heaters were 205,000 units in 1941; 488,000, or more than double the 1941 figure, in 1946; and an estimate of 950,000 for 1947. Home freezers did not exist in 1941. 87,000 were turned out in 1946; 300,000 estimated for 1947. Electric ironers, 260,000 in 1941; 175,000 in 1946; and 500,000 in 1947—again a big increase. Electric washers, 1,892,000 in 1941; 2,000,000 in 1946; 3,000,000 estimated for 1947. Vacuum cleaners, 1,670,000 in 1941; 2,169,000 in 1946; 3,000,000 in 1947. All of this adds up to a grand total of 8,450,000 major appliance units produced in 1941. And in 1946, a year when everyone was complaining bitterly about the sort of job done, 7,563,000 units were produced; and in 1947 the estimate is for 11,850,000 units, and actual figures to date would indicate that this estimate should be reasonably accurate.

I cover these figures with you, not to brag particularly about the job manufacturers have done in the face of many obstacles—although I do think it has

VALUE OF ELECTRICAL MERCHANDISE

	1941 UNITS	1946 UNITS
TOTAL VALUE AT RETAIL	919,537,000	1,008,296,000
NATIONAL INCOME	103,800,000,000	178,200,000,000
PERCENT OF NATIONAL INCOME	.885	.556

SOURCE: National Income Statistics from the Survey of Current Business National Income Supplement (Department of Commerce), July 1947 Page 19.

Fig. 2—Retail Value of Electrical Merchandise in 1941 *and* 1946

been commendable—but to make the point that in the face of production figures like these, had there been any question in the public mind as to the fairness of the prices charged for these products, we would not continue to be in a seller's market on many of these products in most parts of the country today.

There is one other point I might make here, in relation to my overall subject, which is simply this. The value of these products (see Fig. 2), at retail, according to National Income Statistics from the *Survey of Current Business,* National Income Supplement (Dept. of Commerce for July, 1947, page 19), back in 1941, was $919,537,000 against a national income figure of $103,800,000,000. Figured in percentages, the amount of the national income expended for such appliances was less than 1 per cent—0.885 thousandths of 1 per cent to be exact. And in 1946—the most recent year we have exact figures on, the total value of these products was $1,008,296,000—against a national income figure of $178,200,000,000 or about ½ of 1 per cent—0.556 thousandths of 1 per cent, to be exact. The point I wanted to make in bringing out this figure is two fold. First, in spite of increased appliance prices, the percentage of total national income being spent for appliances is smaller today than back in 1941. And, second, regardless of the price structure in our industry, by no stretch of the imagination could it affect the total overall national economy—it's just simply too small a percentage of the total national income.

If that were all there was to this subject, we well might finish this talk by concluding that the effect of present prices of appliances is to cause the buying public to want more of them.

Unfortunately, there is more to this subject than that. I think all of us need to be tremendously interested in present price conditions because they affect our personal lives and affairs, our business futures, and our thinking and planning for the years ahead. You, as sellers of electrical power, are naturally concerned about continually increasing load on your lines—not so particularly right now as to insure healthy growth during years ahead. We as manufacturers must be concerned with the problem of continuing to sell our merchandise in volume, and at a profit, if we are to continue in business. So it seems wise to examine the present price situation from a number of additional angles.

First, let us look at what has happened to the cost of living during the period from 1941 through 1947. In order to make some understandable comparisons, we have taken as our base, a family having a total income of $1,800 in 1941. This is the figure at the bottom of the first column of figures in Fig. 3. To establish how this income was spent, we used a weighting factor in the cost of living, set up by the Bureau of Labor Statistics, Department of Labor, in determining the Consumers' Price Index in January, 1941, as reported in the *Handbook of Economic Statistics,* 1947 edition, page 114. This is the percentage figure shown in the second column. In order to establish what this same family would have to spend, and how it would be spent in 1947, we used a percentage of increase for the various factors in the total budget, in accordance with the Consumers' Price Index of the Bureau of Labor Statistics for June, 1947, cited in the *Survey of Current Business,* September, 1947, page S-4. This is the figure shown in column 5 on the chart. Multiplying column 1 by column 5, and then adding the result to column 1, we arrive at what the same living standard would cost us in 1947. This is the figure shown in column 3. And of course, that now gives us a new weighting factor, percentage-wise, which is shown in column 4.

Fig. 3 shows us, then, that in January of 1941, a family with an income of $1,800 spent on the average, 34.3 per cent of total income, or $617.40 for food. Today food costs are up 90.5 per cent, which means that for the same food this same family is spending $1,176.15. This means that 41.8 per cent of its total income now must go for food. Eleven per cent of its income went for clothing, or $198, in 1941. Today that figure is up 85.7 per cent for a total of $367.69, or 13.1 per cent of the family income. Rent in 1941 took 19.6 per cent or $352.80. Rent increase has been small—9.2 per cent, for a figure of $385.26, and only 13.7 per cent of total income today goes for rent. Fuel and electricity in 1941 cost 6.7 per cent of family income, or $120.60. Today that figure has risen 17.7 per cent making today's cost $141.95 for a 5.0 percentage figure. In examining this figure, however, I thought it well to give credit where credit was due, and so I attempted to segregate the electric costs in this item from the fuel costs.

In the *Survey of Current Business* for September, 1947, page S-4, I find that actually during this period the cost of gas and electricity has *decreased* 8.3 per cent while costs of other fuels and ice increased 43 per cent. I want to make a bow to you folks in the utility industry who have managed to decrease the cost of your product to the consumer, in the face of generally rising prices all along the line. Home furnishings took 4.4 per cent of the family income in 1941, for a total of $79.20. This is now up 82.6 per cent for present costs of $144.62 and a 5.1 per cent weighting factor. Miscellaneous, which includes all other expenses, in 1941 took 24 per cent, or a total of $432. These costs are now up 39.1 per cent for a present cost of $600.91, or 21.3 per cent of the total. In short, this family which earned and spent $1,800 in 1941, now must earn $2,816.58 in order to maintain its 1941 living standard, because total living expenses, as of June, 1947, were up 56.5 per cent.

I think the point to be made from Fig. 3 is simply that general living costs for the average family are up more than 50

COST OF LIVING INCREASES - 1941 - 1947

	JANUARY, 1941		JUNE, 1947		1941-1947
	AMOUNT	WEIGHTING FACTOR (1)	AMOUNT	WEIGHTING FACTOR	PERCENTAGE INCREASE (2)
FOOD	617.40	34.3%	1,176.15	41.8%	90.5%
CLOTHING	198.00	11.0%	367.69	13.1%	85.7%
RENT	352.80	19.6%	385.26	13.7%	9.2%
FUEL/ELECTRICITY	120.60	6.7%	141.95	5.0%	17.7% *
HOME FURNISHINGS	79.20	4.4%	144.62	5.1%	82.6%
MISCELLANEOUS	432.00	24.0%	600.91	21.3%	39.1%
TOTALS	$1,800.00	100.0%	$2,816.58	100.0%	56.5%

* The Bureau of Labor Statistics uses a single figure to indicate the index of fuel and electricity in making up the Cost of Living. In June, 1947, there was a net increase of 17.7% for both items. However, the segregation of this index figure shows the following:

Gas and Electricity decreased 8.3%
Other fuels and ice increased 43.0%

Source: Survey of Current Business, September, 1947, Page S-4

(1) The relative weighting given to the various factors in the cost of living is in accordance with that used by the Bureau of Labor of Statistics, Department of Labor, in determining the Consumers' Price Index in January, 1941, as reported in the Handbook of Economic Statistics, 1947 Edition, Page 114.

(2) The percentages of increase for the various factors are in accordance with the Consumers' Price Index of the Bureau of Labor Statistics for June, 1947, cited in the Survey of Current Business, September, 1947, Page S-4.

Fig. 3—Breakdown of the Cost-of-Living Increases from 1941 to 1947 on a Base Income of $1,800

PRICE INCREASES

Percentage Increases from August 1940 to August 1947

REFRIGERATORS (1)	54.3
AUTOMOBILES (2)	57.3
ALL MANUFACTURING FACTORY WAGES (3)	95.8
DURABLE GOODS FACTORY WAGES (3)	86.3
FARM INCOME (4)	157.9
CORN (3)	248.4
WHEAT (3)	238.3
COTTON (3)	246.5
LUMBER (3)	180.2
BEEF (3)	156.3

SOURCES:

(1) Typical average electrical refrigerator.

(2) Bureau of Labor Statistics, Passenger Car Index, adjusted.

(3) Bureau of Labor Statistics, as reported in the Survey of Current Business.

(4) Sales Management Survey. (annual basis)

Fig. 4—Percentage Increase in Prices of Goods from August 1940 to August 1947

per cent. At the same time, our National Income has risen from $103,800,000,000 in 1941 to approximately $200,000,000,000 in 1947, or almost 100 per cent increase, which simply means that even at present increased prices, people still have more money with which to purchase.

I thought it might be revealing, in light of the other facts we have just reviewed, to see what the average increase in prices on a number of items has been, using figures for the period from August, 1940, through August, 1947. Let us take a look at a few.

In Fig. 4 the first on the list is refrigerators, which are pretty well characteristic of all appliance prices. We took the price of a typical average electric refrigerator in August, 1940, and compared it to today's price. The increase is 54.3 per cent. We used the Bureau of Labor Statistics, Passenger Car Index, adjusted, and came up with an increase of 57.3 per cent for automobiles. At the same time, all manufacturing factory wages have increased 95.8 per cent and durable goods factory wages are up 86.3 per cent, according to the Bureau of Labor Statistics, as reported in the *Survey of Current Business.* Farm income has increased 157.9 per cent, according to a Sales Management Survey. The remainder of these figures are from the Bureau of Labor Statistics, *Survey of Current Business,* and show corn prices have increased 248.4 per cent; wheat is up 238.3 per cent; cotton advanced 246.5 per cent; lumber increased 180.2 per cent; and beef is up 156.3 per cent. And when you compare the advances of factory wages, and farm income, and the advances of these commodities as shown here, the 54.3 per cent increase on electric refrigerators seems modest, indeed.

Up until this time we have been looking at prices in terms of dollars, and percentages. However, I am sure that all of us realize that money, of itself, has no intrinsic value. It merely has a value in terms of the material things it has back of it. In other words, we use money because it is physically impractical to pay for an automobile, for instance, in bushels of wheat or corn. Some common denominator had to be developed to make trade and commerce possible. That common denominator we know as money. But because people often do queer tricks with money, we sometimes lose trace of the fact that money itself has no actual value, and so, in order to obtain a clear picture of actual costs of things, we must go behind the money screen, and examine prices in terms of the basic values of the things which go to make up our actual wealth. Let us do that now.

In preparing Fig. 5, we established an average refrigerator price of $160 for August, 1941; and, using the same formula, arrived at a comparable price of $246 for August, 1947. Our problem now is to determine the actual cost, in basic commodities, of these refrigerators for these two years. In each case, in the following comparisons, the 1941 figures came from the *Survey of Current Business,* 1942 Supplement U. S. Department of Commerce; and the 1947 figures from the weekly supplement, *Survey of Current Business* for September 26 and October 3, 1947.

In August, 1941, corn, using the wholesale weighted average of five markets, all grades, was 74¢ per bushel, as shown in column 1. And at that time, it would have required 216 bushels of corn to purchase our average refrigerator priced at $160. In August of 1947, with corn at $2.30 per bushel, figured on the same basis as 1941, that same average refrigerator, now costing $246 in money, could have been bought for 107 bushels of corn. Wheat, in August, 1941, wholesale weighted average, six markets, all grades, was bringing $1.05 per bushel,

REFRIGERATOR PRICES

(In terms of commodities and wages)

	August, 1941		August, 1947	
	Price or amount in Dollars	Amount required to purchase a refrigerator	Price or amount in Dollars	Amount required to purchase a refrigerator
REFRIGERATORS	$ 160.00		$ 246.00	
CORN (1) Wholesale, weighted average, 5 markets, all grades, per bushel	74¢	216	$2.30	107
WHEAT (2) Wholesales, weighted average, 6 markets, all grades, per bushel	$1.05	152	$2.47	100
COTTON (3) Middling, 15/16", average 10 markets, per pound	16.1¢	994	34.3¢	717
LUMBER (4) Douglas fir, softwood, wholesale, dimension No. 1, common 2x4x16, per M board feet	$25.97	6.2	$64.19	3.8
BEEF (5) Wholesale, fresh native steers, at Chicago, per pound	17.6¢	909	46.9¢	525
FACTORY WAGES (6) Average weekly wages in all manufacturing plants	$31.66	5.05	$49.29	4.99

Sources:
(1) Survey of Current Business, 1942 Supplement, page 118
Survey of Current Business, Weekly Supplement, Sept. 26, 1947, page 2
(2) Survey of Current Business, 1942 Supplement, page 120
Survey of Current Business, Weekly Supplement, Sept. 26, 1947, page 2
(3) Survey of Current Business, 1942 Supplement, page 165
Survey of Current Business, Weekly Supplement, Sept. 26, 1947, page 2
(4) Survey of Current Business, 1942 Supplement, page 133
Survey of Current Business, Weekly Supplement, Sept. 26, 1947, page 2
(5) Survey of Current Business, 1942 Supplement, page 123
Survey of Current Business, Weekly Supplement, Sept. 26, 1946, page 2
(6) Survey of Current Business, 1942 Supplement, page 53
Survey of Current Business, Weekly Supplement, Oct. 3, 1947, page 3

Fig. 5—Comparison of Refrigerator Prices in Terms of Commodities and Wages in August 1941 and August 1947

and our refrigerator could have been bought for 152 bushels of this commodity. In August, 1947, with wheat at $2.47 per bushel, only 100 bushels are required to purchase our $246 refrigerator. Cotton, middling 15/16 inch, average of 10 markets, was bringing 16.1¢ per pound in August of 1941, and 994 pounds could have been exchanged for our $160 refrigerator. In August of 1947, this same cotton was selling at 34.3¢ per pound and would have required only 717 pounds to buy the $246 refrigerator. Lumber, Douglas fir, softwood, wholesale, Dimension No. 1, common 2 x 4 x 16, per 1,000 board feet, sold at $25.97 and 6.2 thousand board feet equalled the price of our average priced refrigerator then. In August of 1947, $64.19 was the price of this grade of lumber, and only 3.8 thousand board feet were needed to buy our $246 priced average model refrigerator.

Let us look at beef. The price, wholesale, fresh native steers, at Chicago, per pound, in August, 1941, was 17.6¢. For 909 pounds of beef the refrigerator could be purchased then. In August, 1947, with beef at 46.9¢ per pound, only 525 pounds are needed to buy our $246 model. Finally, let us consider the problem in terms of factory wages. The average weekly wage, all manufacturing, in August, 1941, was $31.66, and the worker had to trade 5.05 weeks of work for the $160 refrigerator, while in August, 1947, with this same average weekly wage at $49.29, only 4.99 weeks of work are needed to buy the $260 model.

Even the briefest study of these figures will indicate a number of things. It shows us, first, that in considering the prices of electric appliances—or anything else, for that matter, it is highly misleading, in terms of our basic economy, to merely compare prices as they now exist with prices as they were in some previous period. Such comparisons must inevitably be made in terms of relationship to basic commodity values, or true wealth. When this is done, as we have just seen, we come up with the conclusion that even at today's advanced dollar prices, electrical appliances have actually declined in price over this period, figured in terms of basic values. In other words, the farmer must trade fewer of his bushels of wheat, or his pounds of cotton, for an electric refrigerator than back in 1941, and the factory worker needs work less time, at his current pay scale, to buy a refrigerator, even at a currently higher dollar price.

I have just one more chart to show you, in which I think you folks of the Southeastern Electric Exchange will be interested. It is the farm income figures for the states in which you operate. I show them to you because I believe all of us have been particularly impressed with the tremendous opportunity for sale of electrical appliances in rural areas. This is true, not only from the standpoint of the great increase in rural meters, and the corresponding increase in opportunities for first-time sales, as a result; but also because increased farm incomes place these folks in excellent position to buy. And since such a large percentage of your population in the southeast is rural in nature, these figures unquestionably will have a bearing on your own promotional activities in the period ahead.

These figures in Fig. 6 show only the cash return from marketing of crops and livestock. Figures for 1940 are taken from *Sales Management* magazine, issue of April 10, 1941, page 77. Those for 1946—the last year for which actual figures are yet available—are from *Sales Management* magazine, issue of May 10, 1947, page 144.

In the State of Alabama, cash return from crops and livestock in 1940 was $115,463,000 as compared with a return of $293,133,000 in 1946, or an increase of 153.9 per cent. Florida showed a return of $113,486,000 in 1940, versus

$423,728,000 in 1946, or an increase of 273.4 per cent. Georgia rose from $168,048,000 in 1940 to $419,583,000 in 1946, or a gain of 249.7 per cent. Mississippi was up from $147,221,000 in 1940 to $333,528,000, an increase of 126.5 per cent. Louisiana showed a $112,114,000 return in 1940, and a $272,241,000 return in 1946, for a 142.8 per cent gain. North Carolina had farm income in 1940 of $221,768,000, compared to $712,604,000 in 1946, for 221.3 per cent gain. South Carolina showed $116,017,000 farm revenue in 1940 and $259,925,000 in 1946, or 124 per cent gain. Tennessee had a 1940 figure of $141,490,000 compared with $367,721,000 in 1946, for 159.9 per cent gain. Virginia's crop and livestock return in 1940 was $125,638,000 versus $383,722,000 in 1946, or 205.4 per cent increase.

For the United States as a whole, the crop and livestock return in 1940 was $9,119,903,000, and in 1946 it was $23,525,041,000 for an increase of 157.9 per cent. Here in the southeast, it was $1,058,749,000 in 1940 compared to $3,466,185,000 in 1946 or a 174.8 per cent increase. So, while conditions are favorable in the farm markets of the nation as a whole, these figures would indicate that you here in the southeast have considerably bettered your position. Prewar, approximately one-ninth of the total farm income came into the southeast. In 1946 it was about one-seventh.

FARM INCOME

(Cash Return from marketing of Crops and Livestock)

	1940	1946	INCREASE
UNITED STATES TOTAL	$9,119,903,000	$23,525,041,000	157.9%
SELECTED SOUTHEASTERN STATES			
Alabama	115,463,000	293,133,000	153.9%
Florida	113,486,000	423,728,000	273.4%
Georgia	168,048,000	419,583,000	249.7%
Mississippi	147,221,000	333,528,000	126.5%
Louisiana	112,114,000	272,241,000	142.8%
North Carolina	221,768,000	712,604,000	221.3%
South Carolina	116,017,000	259,925,000	124.0%
Tennessee	141,490,000	367,721,000	159.9%
Virginia	125,638,000	383,722,000	205.4%
	$1,058,749,000	$ 3,466,185,000	174.8%

SOURCES:

Sales Management Estimates, April 10, 1941, page 77.

Sales Management Estimates, May 10, 1947, page 144.

Fig. 6—Farm Income in Cash Return From Marketing of Crops and Livestock

In the light of the foregoing figures, several things would seem to be quite clear, as applied to the southeastern area, so far as electric appliance sales are concerned. First, you are in better position, economically, than prewar. Second, the price of electric appliances has not increased nearly so much as has the price of other commodities. At the same time, the income increase has been tremendous. In light of these facts, it would seem that electric appliances today represent a greater value, comparatively, than they were prewar. The net effect upon your buying public, therefore, should be to increase purchases of such appliances.

If we accept this as true, why then the talk of "back-up" of certain appliance lines? What actually is going on? I think you may be interested in some preliminary results of a survey being conducted among dealers at the present time by Kelvinator's Marketing and Organization Division. It shows that currently, on refrigerators, 30 per cent of the dealers indicate no price resistance developing yet. Of dealers, 17 per cent say there is a resistance to low-price models, and 50 per cent indicate price resistance on the higher priced models. In other words, approximately 50 per cent of the dealers have experienced no resistance so far, based on too high prices.

In conclusion, I think we should examine the net of all this.

First, I think we can agree that living costs, and prices generally, are up considerably over prewar levels.

Second, appliance prices are up too, but they have not risen as high or as fast as the general list of commodities.

The result to date seems quite plain. The tremendous backlog of demand, and the value offered in today's appliances at today's prices has stimulated a continued demand in most lines.

What is the outlook on ahead? Appliance companies generally are looking forward to continued good business—better than anything yet seen. Most companies are tooled up to produce a greater volume of products, and need only a freer flow of materials to turn them out.

However, somewhere along the line—how far away still remains an arguable question — the knocking down of this backlog of ready customers will again bring the industry to the point of returning once again to the successful practices upon which the industry was built.

When that time comes, there seems every reason to believe that good business will continue. This industry has always been based upon volume production, fair prices for good value, backed by intensive advertising, promotion and selling effort. That is a formula we know will work, because it has been proved over many years. The leaders in the industry are still those whose success has been based upon such a program—aided immeasurably by the promotional know-how which folks such as are in the utility industry have at their command.

We know that the only answer to any sales problem in this country is to produce more and better merchandise at a fair price, and, in a competitive market, push for sales on the basis of value to the consumer. With such a program there can only be one answer—a continued large volume of sales. And to you as utilities, with the principal objective of selling your own product— elec-

(*Continued on page* 444)

Charles A. Coffin Medal Competition for 1947 Announced

INVITATIONS for the 1947 competition for the Charles A. Coffin Medal which have already been mailed to chief executives in the industry, are expected to draw many competitors who are rightfully proud of their achievements this year under the conditions which the industry has faced in its post-war expansion program.

The Charles A. Coffin Medal honors top achievements in all branches of the industry's operations. The winner, according to the terms of the competition, will be: "The competing company which has achieved the greatest advancement in its operation and physical plant, thereby making a distinguished contribution to the development of electric light and power for the convenience of the public and the benefit of the industry."

The award is a gold medal and a supplementary cash award of $1,000 to be deposited with the employee's benefit fund of the winning company. Presentation of both the Charles A. Coffin Medal and the $1,000 for the employee's benefit fund will be made at the 1948 Convention of the Edison Electric Institute.

Previous awards of the Coffin Medal have marked many milestones in the progress of the electric industry. No awards in the electric industry have been so highly coveted and have shown such a record of benefits for the general public.

Beginning in 1922, when the first award was made to the Southern California Edison Company, 19 awards have been made, one annually to an electric light and power company of the U. S. except in the years 1931, '32, '42, '43 and 1945. The award for 1944 was made to the entire electric utility industry in recognition of its wartime record of accomplishments in the service of the country.

The General Electric Company established the award in 1922 to honor the memory of a great leader of the electrical industry, the late Charles A. Coffin, one of the founders of the General Electric Company. The competition is judged by a special Charles A. Coffin Award Committee on the basis of presentations for the year submitted to the committee prior to April 1, 1948.

Suggested Outline for Presentation

The committee urges that presentations be simple and brief. A clear setting forth of the more significant facts and considerations is all that is necessary. Elaborate and costly exhibits are not desired. A clear and complete presentation can be made in a statement of not over fifty to one hundred typewritten pages, with exhibits where essential. The following outline is for the guidance of companies submitting presentations, and to aid the Committee in its difficult task of bestowing the honor at its disposal.

Instructions and General Information

Two copies of a presentation, setting forth significant facts relative to a company's accomplishment, must be filed with the Committee. One copy will be returned later if desired. It is preferred that all presentations be made on standard typewritten sheets, accompanied by such exhibits as may seem desirable.

It will be helpful to the judges if a summary of the major accomplishments claimed is made a preface to the presentation.

All statements shall be filed with the Committee not later than April 1, 1948. These documents should be addressed to the Charles A. Coffin Award Committee, Edison Electric Institute, 420 Lexington Avenue, New York 17, N. Y.

Submission of a presentation carries with it a privilege of publication in whole or in part over the name of the company. If desired, the company may mark certain parts as confidential, and these parts will not be published without specific permission, although they will be available for reference at Institute headquarters to anyone desiring to study them.

The award of both the Charles A. Coffin Medal and the One Thousand Dollars for the Employees' Benefit fund will be made at the 1948 Convention of the Edison Electric Institute.

Outstanding Accomplishment

A statement of one or more outstanding accomplishments should be made the basis of a company's presentation. Information submitted should relate particularly to the accomplishments which have reached fruition in the year 1947, but information relating to decisions and operations of earlier years may be included when they played an important part in bringing about the outstanding accomplishments cited . . . The following subjects and any other appropriate items may be presented as contributory evidence in support of the principal accomplishments:

General Administrative Features

- *Financial operations as reflected by the company's balance sheet and income statement.*
- *Production and sales of electric energy.*
- *Rate developments.*
- *Important changes in company administration for increased efficiency.*
- *Employee relations.*
- *Employee training program.*
- *Relations with consumers and the public.*

Commercial and Accounting Features

- *Increased usages of electrical energy and revenue.*
- *Promotional and sales programs, including cooperative sales development, financing plans.*
- *Advertising programs.*
- *Trade relations.*
- *Farm electrification progress.*
- *Industrial development program.*
- *Accounting developments.*

Engineering and Operating Features

- *System operation.*
- *Pioneering developments.*
- *Reliability of service.*
- *Generation, transmission, distribution, construction designs, practices and developments.*

Accident Prevention

"The Half Was Not Told"

By D. Hiden Ramsey

General Manager, Asheville Citizen-Times Publishing Company

An address presented at the ceremony naming the Walters Hydroelectric Plant of the Carolina Power & Light Company in honor of Charles S. Walters, Vice-President, at Waterville, N. C., on September 9, 1947

TWENTY-FOUR years ago there came to Asheville from the far Northwest a man who was destined to make a deep and beneficent imprint on that city and on all of western North Carolina.

He came as a stranger to a strange land. All of his active life had been spent in other and may I say, less livable and civilized?—sections of the nation. He was a native of Wisconsin transplanted on the Far West.

This man was no professional glad-hander. He never made a calculated art of gaining the good esteem of others. He did not have to read Dale Carnegie to be able to win friends and to influence people.

But those of us who lived in Asheville during his early days there soon discovered that no person could come within the range of his lovable personality without giving confidence and goodwill to this stranger.

Soon this man, who brought with him so much of the breeziness and democracy of the Far West, was taking a very considerable place in the social and business and civic life of the community.

The circle of his friendship gradually widened. Soon it encompassed practically the entire community. It was just impossible to resist the warmth of his personality.

Soon honors began to gravitate to him without any seeking on his part. Organizations found that in him they had a new leader of unusual capacities. He hardly discharged one important civic responsibility before another waylaid him.

The popularity of this new Ashevillian was not of the morning-glory type. It did not wither with the passage of time.

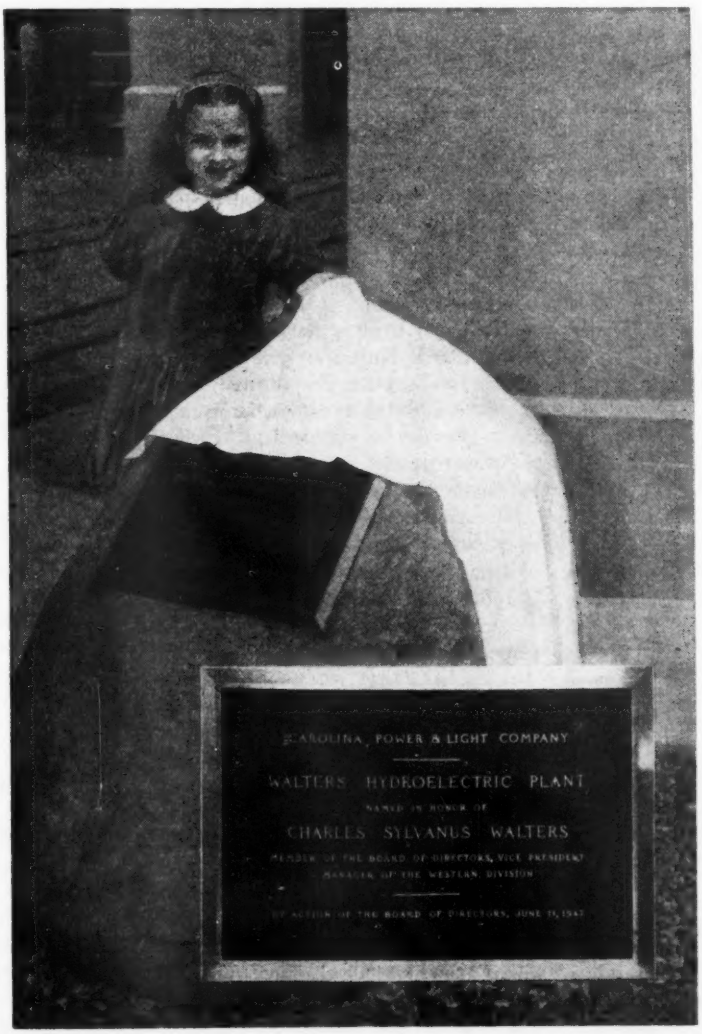
All of us soon learned that his geniality was not make-believe. It was the natural expression of the innate kindliness and humanness of the man. The smile which he always wore on his face had its springs in a smiling heart.

The company which he came to serve as vice-president grew. It built this great plant here. It expanded its lines and services throughout the territory.

Above all, this company grew in the confidence of its customers and of the people. This new vice-president gave to it much of the human touch of his own personality.

This man who came to Asheville 24 years ago is now a veteran citizen of Asheville. He is no longer a stranger. He is a lovable and useful fixture in the life of the community. He is richer than he ever was in the affections of his fellow-townsmen and of the people of western North Carolina. No person to the mountains born has a deeper love of these eternal hills and of their people.

He is not as young as he was when he cast his lot with us more than two decades ago. His hair is a little whiter. His step may not be so springy. But to him there is still the eternal spirit of youth. If he has cares to vex him, he keeps them to himself. His smile has become, if anything, more winsome with



Jane Firmin, niece of Charles S. Walters, vice president of the Carolina Power and Light Company, unveils the memorial plaque naming (see inset) the new hydroelectric plants at Waterville, N. C., in Mr. Walters' honor.

the years. He still bears cheerfully and effectively his full share of the responsibilities which a discerning community lays on the capable and the willing.

Today this man—Charles S. Walters—is to be honored by the great company which he has served so efficiently and so loyally across the years. Henceforth this vast hydroelectric plant buried here deep in this mountain fastness is to bear his name—a truly honored name. We are here as his friends to rejoice in the honor that comes to him.

A Good Name

Every great handiwork of man, every distinctive expression of nature deserves a good name. But names are not always given wisely or appropriately. Sometimes they are bestowed in vanity or in caprice. Often they are chosen for no better reason than the fact that they are pleasing to the ear.

But today we give a name that is deserved. The name which we bestow is logical and appropriate. It serves the eternal fitness of things.

President Sutton has given some very impressive figures about the magnitude and output of this gigantic plant. Most of us, I am confident, were amazed by what he told us. All of us have known, of course, that this hydroelectric project was located here in a remote region of Haywood County. But few of us had ever visited it before. I can express my own impressions in no better way than to borrow the words spoken by the Queen of Sheba during her visit to the court of Solomon:

> "It was a true report that I heard in my own land of thy acts and of thy wisdom.
>
> Howbeit I believed not the words, until I came and mine eyes had seen it; and behold, the half was not told me."

Behold, indeed, the half has not been told us about this plant.

Most of us have come, I fear, to take electricity for granted. We turn a switch and its magic lights our homes, turns the wheels of our machines, takes the drudgery out of our lives. We little wonder whence and how it comes. We give too little credit to those human forces that make it possible.

Here today we see the great burden-bearer of the sections that the Carolina Power and Light Company serves in western North Carolina. It does the work of innumerable thousands of men and animals. Truly it is the hewer of the wood and the drawer of water for this region. Through its miracle it makes civilized and prosperous living possible for us. It is literally and figuratively the power-house of western North Carolina.

This plant is not only the burden-bearer of our section. It is a monument to the courage and skill of man. It is a testimonial to the faith and resourcefulness of private enterprise.

This vast plant was not easily or cheaply built. It was conceived in unlimited faith in this section and in its advancement. Extraordinary engineering skill went into its designing. Private investors furnished the millions of dollars required for its construction. It was built long before governmental activity constructed similar projects in this general section of the South.

Industrial Potentialities

It is difficult to overstate what their hydroelectric plant has meant and will continue to mean to western North Carolina. It has insured to us an adequate supply of dependable power at all times and under all conditions. There have been no droughts severe enough to make its output inadequate for our needs. Not even during the stress of war were the communities served by it forced to curtail their consumption of electricity.

The happy truth is that this plant was built in such faith and with such far-sighted concern for the future growth of this section that its production is more than sufficient for our needs. Much of the power generated here is exported to less favored communities.

The tremendous potentialities of this plant have a significance which, I hope, will not be lost on us. Western North Carolina can grow very considerably without outgrowing the output of this plant. We can seek new industries in the confidence that there will be dependable power available to us at all times and under all conditions.

As long as we have power to spare, we should not object to sharing it with other regions. But our objective should be to build our industries up to the potential of this plant. We should not be content to generate electricity for use in distant communities. We should resolve to take full advantage of the margin of growth which this plant provides.

If this happy occasion has a significance above and beyond our desire to honor Charlie Walters, that meaning is to be found in this: in this plant here we have a priceless asset. It is already performing service of inestimable value to the communities in western North Carolina for which it furnishes power. It can be made to render still greater service. It provides us with the chance to build and attract new industries. We can chart our own industrial growth in the knowledge that power will be available in large and dependable supply.

Room for Growth

Today we are in an isolated spot of our section. There are here no great factories, no large armies of employees. Nature with its relatively primeval forests presses close upon this plant. As we stand here today in this remote region, industries seem far off and almost unreal.

But from this plant flows in almost unbelievable volume that magical power which is necessary to vast industries, to congested peoples, to the convenience of modern life. In the great production of this plant is the only immediate limitation upon our progress which we should respect. I believe that I can safely make this further statement: if we outgrow the potential of this plant, the Carolina Power and Light Company will provide other plants. My own observation of the company is that it does not wait until the need for power is acute before it acts to supply it. In its planning and providing, it anticipates.

Charlie Walters did not build this plant. Technical men—the best engineers in the land—designed it. Labor drawn from all parts of western North Carolina and from other sections did the day-to-day work. Investors in all parts of the nation provided the capital.

But the name Charlie Walters belongs to this plant. It has been his responsibility during the past 17 years to see to it that the power generated here served the homes and the factories of western North Carolina. After all, a hydroelectric plant is just a meaningless creation of engineers until it begins to do the work of society with the power that it creates.

Charlie Walters has given this plant very much of its social significance. He has made it in actual fact what it was in original purpose—the burden-bearer of this region—the original source from which radiates into small factories and great factories, into pretentious homes and into humble homes the civilizing power of electricity.

(*Continued on page* 456)

If I Were a Customer of Yours

By Davis M. DeBard

Vice President, Stone & Webster Service Corporation, New York, N. Y.

An address before the General Sales Conference, Southeastern Electric Exchange, Atlanta, Ga., on October 30, 1947

DURING the past few years a great many National Polls have been made testing customer attitude. The February 27 issue of *Public Utilities Fortnightly* magazine, page 313, contained an article on "What The Customer Thinks" of his or her utility, by J. C. Bevis of the Opinion Research Corporation, which is well worth reading.

Mr. Bevis calls attention to the fact that doing business today involves more than merely performing an economic function well. "Good deeds, good service or good motives," says he, "are not enough." "You can pay high wages, contribute to every fund that comes along, provide excellent service at rates your customers agree are reasonable and still have the public down on you." He further states: "The electric industry is now in the frontline trenches fighting the battle of free enterprise—fighting for the principles in which the American people, we know from our studies of public opinion, heartily believe. And yet, a large proportion of the people favor government ownership of their electric company. In last year's national survey the figure was 42 per cent in favor of government ownership." Furthermore, he states that 68 per cent of the people feel that their electric rates would be lower under government ownership; that 11 per cent of the electric utilities' employees favor government ownership. Some 7 per cent of the people of the nation say they have had unsatisfactory dealings with their electric companies, that's about one-fourth as many as praise the companies—or, 28 per cent.

Favorable Customer Contacts

Mr. Bevis concludes by stating: "Utilities need more contacts with their customers, more employee education, and more favorable impressions. What the people think today stems from lots of things, many of them trivial incidents—passing reference to the company in a conversation with a friend, a glance at a company ad in the local paper, appearance of company's window and showroom, a smile and a pleasant remark from an employee as the customer pays his bill, a courteous answer to an inquiry at the company office. All these things and many others go to make up the public's appraisal of your business and your company."

I would like to discuss with you the subject, "If I Were A Customer of Yours." To properly discuss such a subject I will reintroduce YOU and ME.

YOU represent the electric operating utilities, scattered over the United States, operating in the small towns, in the large cities and in the Metropolitan Centers. YOU represent electric utilities in the United States that supply some 30 million residential customers with lighting and numerous other valuable services. YOU have established in business districts, offices and showrooms for the convenience of your customers in paying their bills, in applying for service, in requesting repairs and in transacting other business pertinent thereto.

You, the Management

You use your best efforts to maintain an organization of trained men and women employees, courteous and efficient in the performance of their duties. You pride yourself in maintaining 24-hour service at the proper voltage. You try to make your rates as promotional as possible and as low as good business dictates. You advertise; you display some appliances in windows and on your display floors; you maintain a Home Service Department, a Sales or Promotional Department; give demonstrations, helpful advice; and cooperate with dealers in building load. You, the management, feel you are doing a good job in serving the community and that your customers should all think the same way. Now the important thing is, what does the customer think and say about the utility?

Let's pause for a moment and introduce ME, your average residential customer. Men, women and children of the homes of America whose opinions we respect in the operation of public utilities are represented by ME, the character I am trying to portray.

I am an American citizen. I take pride in my locality, have employment at a fair wage, meet my financial obligations and dress neatly and conservatively. I have, by elimination, picked out my favorite department store, shoe store, drug store and grocery store, all of which I have had an opportunity to choose, but due to the nature of the utility business and the necessity to keep the costs of service low, I have only one electric company to contact.

Me, the People

I have two children, want to give them the best education and have them brought up in the most progressive community in order that they might have every advantage. I know every father has the belief that his boy has a real chance to become President of the United States if he, the father, can only give him the proper advantages and training.

Let me repeat, I am that average American, God Fearing, industrious citizen, hopeful for a safe and better world to live in. I represent Public Opinion.

So much for the introduction of YOU and ME.

Now, if I were a customer of yours, I would like to think of you as:

1. A good citizen in my community, promoting its growth and welfare;
2. Employing people who are friends and neighbors of mine;
3. Having leaders who are leaders in community thought and action;
4. Providing rates as low as possible consistent with good business;
5. Paying employees fair wages;
6. A place to work which offers:
   a. Reasonable security of job
   b. Dignity and self-esteem for the individual
   c. An opportunity to progress.

I would like to have the feeling that the company thinks of me, their customer, as an individual and as important to their success instead of making me feel small. You should try to make me feel big, important and necessary. How can you accomplish these things?

1. *Have offices that are warm, friendly, intimate;* as distinguished from the cold bank or mausoleum-like offices we often see.

2. *I would prefer not to run up against marble and bronze counters with bars across them where I pay my bills.* Attention can be paid to present trends in bank interior designs and in new utility offices.

3. *You should be anxious to tell me and show me what your product does for me and for how much.* I am not interested in 25 water heaters lined up in a row. I am probably 80 per cent women. Statistically it is stated that women spend 80 per cent of their husband's income. Many of us married men wonder if that is not an understatement. I read women's magazines—*Ladies' Home Journal, Better Homes & Gardens, Good Housekeeping,* etc. I read the Sunday Supplements with their special features for women. I read the advertising of the manufacturers of many different appliances and home building materials. I get many of my ideas for keeping house or building or redesigning from the attractive and appetizing way new ideas are shown to me in the things that I read. You, my utility company, can be of tremendous help in intelligently translating those desires into resultful and satisfying action. The most important thing that you can do is to display the various products that use electricity in actual operation. I asked a customer of a utility company if she would be good enough to tell me what she thought her utility should do to promote its public relations and its product.

Dress Up for the Customer

I quote: "I would like to see my utility dressed up. I think the care with which displays are made on the sales floor can do a great deal in winning a customer. I would like to see these utilitarian appliances displayed in a manner that would make me realize immediately that they could make my life more attractive, comfortable and happier. I believe that most people's lives are too hurried these days to bother with straining their imaginations to the point of trying to see how a piece of merchandise is going to look and fit into the customer's home, once it leaves the sales floor. I believe the customer would like to see appliances set up in attractive home-like surroundings similar to those in which they are going to be used, to give the merchandise a personality. If this is done it immediately allows the customer to see how the appliance would fit into her mode of living—and again without straining the imagination too much to see it in such surroundings."

4. *Live displays should be in normal surroundings.* A back, side walls and a ceiling to represent how the kitchen would fit in an actual home. Food can be cooked and I will smell the aroma. By the way, the *New York Times* quotes Dr. Ralph Bienfang, Professor of Pharmacy at the University of Oklahoma, as predicting advertisements will soon smell good. We have always known that some smell, but we are delighted to know that in the future they are going to smell good. He prophesies that this type of advertising will be the next customer advertising and that the magazines in picturing food dishes will have them to smell as if they were being cooked in the kitchen. This is certainly news. Laundry can be done and I can see it washed on the sales floor using ample heated water. One progressive utility in the middle west has so arranged its large sales floor that all kinds of appliances are connected to the line and each group has a demonstrator in attendance. Very few appliances are on display that are not connected. A number of visits to this display room at different times of the day found the majority of the demonstrators busy with interested prospects at each booth. The same interest is shown with a live kitchen and laundry located in a town of 5,000 meters. Hardly a customer comes in who does not linger at the demonstration.

One large utility in the East has established a special showroom in connection with its league to demonstrate electric kitchens and laundries.

My appeal to you is to demonstrate use on your own sales floor. This is important whether you merchandise or whether all sales are through the dealers.

How Often Do You See Your Customers?

You asked the question—How often did you see me, your average customer?

I have been very much surprised to find after collecting considerable data that three of every four residential customers in the United States go to their utility offices to pay their bills. In a number of medium and large utilities the percentage is considerably higher. In certain of the larger areas it is a bit lower but on the average, 75 per cent of residential customers pay their bills in your offices. This means that 22½ million electric customers visit your offices in the United States once a month.

What are you doing to make a good impression and to create the desire for greater use of your service? Wouldn't a department store welcome such a customer travel once a month! It would be worth at least 10 cents per customer per month to them. Suppose you figure it at 5 cents per customer per month. For this amount you would be able to build up working kitchens, have live demonstrations of your major appliances, and make your display rooms so attractive that a great amount of additional business and good will would accrue to you.

Open Your Doors

You, in selling use must start at the top and instill into the entire organization, from the president down, its great importance. If this spirit exists, then there is a tremendous unexploited opportunity to create good will and sell utility service through the proper approach to, and presentation of, facts to the many thousands of customers who monthly pass through the doors of your offices. Who knows, perhaps national percentage figures developed by the Opinion Research Corporation would change in our favor if every utility improved their displays and demonstrated customer use of their product.

The Effect of Electric Appliance Prices on the Buying Public

(*Continued from page* 439)

tricity—this can mean but one thing—a continued increase of load on your lines.

But—and there is this one but—it means that utilities, manufacturers, dealers, salesman—in fact, all of us who are interested directly or indirectly in the sale of such appliances, must be prepared to return to real, hard work. There are sales organizations to be trained again. There are sales programs to be built and made to function. There are advertising programs to be conceived and put into operation.

I am sure that all of you are looking forward, as we are, with pleasurable anticipation and boundless confidence, to the challenge which that task presents.

Planned Lighting and the Electrical League

By Jos. S. Schuchert

Manager, Commercial Sales, Duquesne Light Company, Pittsburgh, Pa.

An address presented at the Twelfth Annual Conference of the International Association of Electrical Leagues in the Statler Hotel, St. Louis, Missouri, on October 8-11, 1947.

THE most important, never-ending challenge of an Electric League is to make any cooperative program "our" program — not "your" program, not a "utilities" program, not a "manufacturer's" program but "our" program: to make every member of the League think of it as his League, not a thing apart from him that someone else supports and that he just works on the fringes as extra trimming to justify calling the organization a League.

That's my opinion of the function of an Electric League. If that is true, the duties and responsibilities of the League Manager are quite definitely fixed. He should be a good doctor, lawyer and Indian Chief. He must be a salesman and an orator. He must have patience, tact, integrity. He must understand human behavior. He should be a good organizer and a spark plug, constantly overflowing with enthusiasm.

Planned Lighting and You

Your conference theme, "Everything Has To Be Sold," is a timely and thought-provoking theme. The League has a constant selling job to do and, as I said before, the League Manager must be a good salesman. I have the opportunity today to give you the story of the Planned Lighting Program. Many of you have heard about it; some of you may be very familiar with it. I'm going to try to sell you on it and then I want you to do the best darn selling job you ever did in the community you serve. In many communities the success of the Planned Lighting Program will depend on the Electric League!

This program is a "natural" for the Electric League. I have been in the electrical industry in many capacities for more than twenty years. I believe this is the greatest and best organized opportunity for cooperative action ever made available to our industry. After I bring you up-to-date on the program, I would like to present some suggestions as to what I believe is your part.

Planned Lighting means good lighting — better lighting. The Planned Lighting program has been developed to give the users of light, the designers of lighting and the suppliers and installers of lighting equipment and other kindred electrical materials the benefits and rewards which are potentially possible.

As a League man, you are a manufacturer's representative, a distributor's representative, or a utility man. You must be a contractor and a dealer. Since every element of the industry will benefit from the Planned Lighting Program, it becomes their program and your program. You, in the coat of many colors; you, representing individually and collectively, all branches of the industry, will benefit if you will cooperate by your active participation. Your public—the customers of your members—will benefit because of the gains they will realize from good lighting and because of the safeguard the Planned Lighting Program provides against unwise investments in poor lighting installations.

Thus, the program is the League's program. Wherever active Leagues operate they have a key responsibility. In fact, they must play a major part if the program is to be a success.

The Modern Lighting Age—The Need Of A Program

Never since the change from oil or gas to electric lighting has there been such revolutionary new tools and techniques available. For several years before the war many in the industry realized that as soon as light sources and lighting equipment would be available:

1. A glorious opportunity would exist to obtain a real public acceptance of better lighting, to develop a greater user appreciation of the needs and benefits of good lighting than was ever before thought possible and in a real sense, not in wishful thinking, "to bring the sun indoors."

They also realized that:

2. Effective sales effort could be thwarted; the market could be sold "short"; the opportunity could be muffed or sold "down the river" because:

   a. The greater technical complications make modern lighting confusing to the potential customer and places him at the mercy of anyone who gains his confidence.

   b. The obvious market possibilities would bring many "fly-by-night" unsound manufacturing and selling organizations into the picture. Unscrupulous salesmen would see an opportunity to replace every incandescent unit being used for general lighting purposes. Their chief effort would be devoted to obtaining an order for "replacement" fixtures. The magic of fluorescence would be waved in front of the customer and cut prices on equipment plus a "lower cost of operation story" would constitute the chief selling attack. Selling better lighting in terms of consumer benefits would not be given any consideration.

The Answer—The Solution To Our Need

In casting around for a solution, particularly to a complicated problem, the natural tendency is to assume that the solution also must be complicated. This is usually not true.

Many ideas were considered. Industry-wide certification ideas had to be abandoned because of legal obstacles and impossible coordination problems. The more or less stereotyped methods of the past, preaching the benefits of good lighting and the market possibilities for the different branches of the industry, were not considered sufficiently strong nor effective to meet the requirements. We realized that after we urge good lighting we must quickly state what we mean by good lighting. The industry needed a means of working together. In order to do this they must have something "on which they could hang their hat"—something "to which they could tie." They must have a theme—a standard-bearer.

Instead of a complicated solution a

Promotional Materials for the Store Lighting Campaign

very simple idea was born. Two words, "Planned Lighting," were proposed. The idea, the concept was explained. As the meat of this idea was digested and its possibilities analyzed, it was unanimously hailed by the industry as the "coordinating tie" for which they had been groping. Here is an idea that was easily understood and could be a perfect solution to the problem (if the industry would follow through). The program would permit us to have a much better chance to give the users of light the wonderful benefits possible and to give all branches of the industry the tremendous potential rewards which could stem from their cooperative efforts.

The idea of Planned Lighting, as most of the industry knows today, is very simple. We preach and preach and tell and sell, advise, counsel and plead and beg, entreat, ask and request all users of light to have a plan made before they buy. We tell them "not to buy a pig in a poke," "not to guess," and "not to take a chance"—that the many new light sources, types of lighting equipment and techniques are confusing. We tell them that if they want to reap the important benefits they will have to obtain a well designed PLANNED lighting installation.

So we say, "have a plan made before you buy." "It's only good sense." "You wouldn't build a house without a plan." "Why buy such a thing that is so technical, so important as lighting is today without having a plan made." "Consult 'The Man Who Plans.'"

The customer who was planning to change and perhaps buy "just fluorescent fixtures" will be persuaded to have a plan made before he buys. The costly mistake of buying a poor lighting installation is prevented. The mistake is a double-barrelled one because of: first, the loss of benefits which would have been obtained from a good lighting installation and; second, the actual monetary loss involved in the capital investment for a poor lighting installation (for which finances may not permit replacement for many years).

Questions in a layman's mind might be, "Have the tools been designed and can they be manufactured?" "Have the techniques been developed?" In short, "do we have the products and the 'know-how' to fill the tremendous needs?" A brief consideration of the available tools forms convincing proof that everything we need is here—the tools are ready for use if we are ready for action.

The fluorescent light sources, the mercury lamps, the host of incandescent light sources add up to an almost unbelievable number. Commercial, industrial, and residential lighting fixtures, C.L.M. lamps, certified residential fixtures now being produced in quantity by many manufacturers prove beyond doubt that lighting fixtures and lamps are ready to be installed if we are ready to sell them.

Thus, with consumer benefits, needs and markets established and with the assurance that we have all the tools required, we must put them together. The lighting needs of the public can be filled only if lighting products and lighting knowledge are combined and applied to each individual consumer's requirements. How are we going to encourage the consumer to fill his needs adequately and efficiently with the proper tools and the proper techniques? The Planned Lighting Program is the answer.

EEI Promotional Support of the Program

The Planned Lighting Program is more than just a selling idea—much more than a lot of promotional material and advertising dreams. It's a theme; a standard-bearer. It is, if you please, a crusade.

Of course, such a program must be supported by a promotional and advertising effort. That also is complete and ready today. The Planned Lighting Program, sponsored by the Edison Electric Institute and developed by experienced talent from all branches of the industry, provides complete materials for:

1. *Advertising*—Direct mail, circu-

Promotional Materials for Planned Office Lighting

lars, newspaper and radio ideas.

2. *Consumer Education* — Booklets, leaflets and circulars to be personally delivered by "The Man Who Plans" or "The Woman Who Plans" to the prospect who has become interested as a result of the advertising.
3. *Sales Helps*—Visualizers, sound slide films and other sales helps to guide the industry representative in making his sales presentation.
4. *Planned Lighting Recommendation Forms*—to assist the "Man Who Plans" or "The Woman Who Plans" in making the planned lighting layout.
5. *A Bibliography*—of all worthwhile materials, regardless of the originator, which might be helpful in selling Planned Lighting.

Several hundred thousand dollars have been invested in these materials. They are ready now. They cover five markets—homes, stores, offices, schools and factories. And here they are. They are designed to do a threefold job:

1. Tell the customer the benefit story about all of the important advantages he can gain from good lighting.
2. To build up the "Planned Lighting" idea; to convince the customer that good lighting needed to give him the desired benefits means Planned Lighting.
3. To build up "The Man Who Plans" or "The Woman Who Plans"—to build them up as experts and thus add prestige to them and to the program.

Can The Job Be Done—Are The Results Worthwhile?

Many planned lighting installations already installed show not only what can be done but what has been done. Hundreds of jobs would be 50 per cent or less (in several cases, much less) of the lighting installation actually made if it had not been for active application of the Planned Lighting Program. Such jobs can be duplicated in thousands of buildings of all types in every section of the country.

While the program is just getting started, its working success already has been proven.

Rewards To The Industry

The following figures are not dreams. They are facts. The research, the careful studies, the market surveys not only indicate these potentials but prove that they are entirely possible and can be achieved without question if the industry cooperates to do this job.

Planned Home Lighting Information and Promotional Materials

FIXTURE COST—WITHOUT PLANNED LIGHTING—*1½ BILLION DOLLARS:* WITH PLANNED LIGHTING — *7½ BILLION DOLLARS.*

WIRING AND INSTALLATION—WITHOUT PLANNED LIGHTING—*$750,000,000:* WITH PLANNED LIGHTING—*3 1/10 BILLION DOLLARS.*

LAMP BULB RENEWALS—*4½ TIMES AS MUCH.*

KILOWATTHOURS — USAGE PER YEAR—*2½ TIMES AS MUCH.*

Let's recap. We have:

1. Consumer needs and benefits accurately known and firmly established.
2. All of the tools, techniques and "know-how" necessary to fill the needs.
3. The Planned Lighting concept which ties everything together. Planned Lighting ties together the needs and the tools to fill the needs. Planned Lighting provides the means of selling good lighting installations and preventing the purchase of poor lighting installations.
4. A Planned Lighting advertising and promotional program in which millions of dollars are being invested by all branches of the industry. NEMA, NEWA, fixture manufacturers, Fleure-Lier, RLM have already backed the program with promotional dollars. A comprehensive supporting promotional program sponsored by the EEI ready for use.
5. The assurance that if we are equal to the task, all elements of this grand lighting industry will reap benefits far beyond those necessary to be commensurate with the investment and the effort required.

There it is. We have all the ingredients for successfully accomplishing the most promising selling objective ever attempted. Here we have an opportunity to render one of the most worthwhile services ever made available to the American public. This is the program of the industry. It is up to the industry to put it across.

Emerson said, "Thought is the seed of action." We have the thought; we have the seed. This is the time for action! The League should be the prime mover, the self-starter, if necessary, the spark plug. They should:

1. Acquire a thorough understanding and develop an inspiring enthusiasm on the part of all members of the League staff.
2. Assist in explaining and selling the program to all branches of the industry.
3. Recognize the various things which must be done to effectively localize the program and do everything possible as a League to see that these things are done.

In Pittsburgh a very effective cooperative Planned Lighting Program has started. The Residential, Commercial and Industrial Sales Section of the League include lighting committees. The following factors were recognized and apply to Leagues in any part of the country:

1. The League Manager and staff must be sold on the program and enthusiastic about it. The League must believe and do everything possible to make their members believe that lighting, high quality lighting, high intensity lighting is needed and that it can be sold in a successful manner—that customers will want more and more of it if they understand the benefits they will receive from it—that there is no saturation and that *that* word is further away than it ever was before. They must have vision, confidence, courage and determination. They must realize that the sales test, insofar as lighting is concerned, will come when the cream has been skimmed off the lush market.
2. The League must sell all branches of the industry and keep them sold and enthusiastic. All branches of the industry must be made to realize the benefits their customers can obtain and the potential rewards which they can reap if they cooperate in this program. Please recognize the important part which must be played by the electrical contractor.
3. The League must encourage their membership to realize that this program cannot be successful without creative selling. That means market development with advertising and personal contact. That means constantly preaching the gospel of good lighting and its benefits by printed word and spoken word. That means selling jobs where there was no job before. That means cultivating barren ground to grow seed. That means selling relighting jobs, not only competing with one another for those remodeling jobs or new building installations.
4. The League should be training conscious with respect to everyone in the lighting business. Training programs using the most up-to-date techniques are available both for technical training and sales training. Manufacturers, the EEI, the Illuminating Engineering Society and others have available all of the training tools that are required to equip the men of the lighting industry in your area to carry the message as it should be carried, to tell the story as it should be told.
5. The League should encourage and, if possible, act as a vehicle for conducting cooperative advertising and sales promotional programs. If the utility in your territory plans to use the EEI material, a schedule can be prepared and manufacturers' or dealers' material sent out between the utility pieces. The larger the number of constructive advertising contacts made from a number of sources, the more effective cultivation will be realized.
6. The League should keep conversant with all phases of the program. You should work closely with all utility people concerned with lighting. You also are the vehicle or means of cooperative action in your community. Every organization concerned with lighting directly or indirectly in your area should take an active part in this program. Analyze constantly by constructive thinking what important gaps exist in the local program which may be necessary to fill in order to insure its success. Call these to the attention of the proper parties. Do not be satisfied until action is taken.
7. The League must realize that this is a job for an army—a big army. The League must lead the way. As the army consists of different branches—the infantry, the air corp, the engineers, the artillery, all of which realize that working together is necessary to meet the crucial test, so the different branches of the industry must work together to meet the challenge of the Planned Lighting Program.

Kansas City Power & Light Uses Planned Lighting in Its New Store and Office Building

WHEN some 4000 to 5000 customers of the Kansas City Power & Light Company attended an "Open House" party Nov. 22 in the new Plaza store and office at 4764 Broadway, Kansas City, they found a tangible example of modern lighting tailored for a specific job.

Designed as a merchandising center and planned for maximum visibility and the use of interchangeable display units, the new store occupies the south portion of the new Plaza Time Building. The new offices include 10,800 sq ft of first floor and basement space, approximately twice the amount leased from the J. C. Nichols Company for pre-war use by the Power & Light Company for its Plaza location.

Three distinct types of lighting are used in the new store: Gyro spots which may be rotated at a 30-deg angle or directed downward for emphasis lighting, an indirect incandescent system built into the ceiling for overall lighting, and a fluorescent system completely louvered from sight, which is instant starting and

(*Continued on page* 460)

Three of the five model electric kitchens on exhibition in the new "Planned Lighting" offices of the Kansas City Power & Light Company.

Where Do We Go From Here?

By Louis Ruthenburg

President, Servel, Inc.

An address Before the Gas and Electric Sections of the Wisconsin Utilities Association, Milwaukee, Wisconsin, on November 20, 1947.

WITHOUT attempting much prophecy, may I place before you one man's observations of some of the forces that seem to control the current and future trend of American business?

To my own observations you may add those of more competent authorities, as well as your own, and from such composite views your own prophecies probably will be more dependable than those expressed by members of the Crystal Gazers' Union.

John Gunther's recently published book, "Inside U. S. A.," has for its declared purpose "to discover the forces which make this incomparable Golconda of a country move." According to Lewis Gannett's review of this book, "A great deal of Mr. Gunther's book is devoted to the mixedupness of America. Party lines are mixed. Class lines are mixed. You just can't fit America into neat categories and generalizations. But America keeps moving. . . . America is mixed up, but fundamentally progressive."

Certainly we are all very conscious these days of the thing John Gunther calls "mixedupness."

Basic Pattern

As a result of my own efforts to understand "the forces that make this incomparable Golconda of a country move" it seems to me that the widely distributed and incomparable material blessings which characterize our culture are not the result of accident, of our wealth of natural resources or of unassisted providence. These benefits flow from the magnificent design so well conceived, so carefully wrought and developed by the founders of the republic.

Our forefathers freed this nation from restrictive influences and created environment and incentives conducive to effective cooperation on the part of all elements of our mixed social structure—workmen, farmers, consumers, merchants and salesmen, inventors, industrial pioneers, investors. In the environment and under the incentives so created, an ingenious and energetic people developed a beneficent economic cycle which has brought about the American way of life and the American standard of living.

Examination of this beneficent economic cycle discloses a process which is essentially simple and which should be universally understood. American inventive ability, untrammeled and operating under effective incentives, has developed a great wealth of new and desirable products and constantly improved techniques of production. Mechanical power has rapidly supplemented manpower. We have learned to work more effectively together as productive human groups. As the direct result of such developments we have achieved rapidly *increased productive efficiency*. An essential factor in the formula has been constantly increasing investment of funds in the facilities for production. Let's look at a 90-year record:

Year	Investment Per Plant	Investment Per Worker	Horsepower Per Worker	Annual Wages Per Worker
1849	$ 4,000	$ 500	Very little	$ 248
1879	10,000	1,000	1.3	346
1909	70,000	3,000	2.9	510
1939	270,000	6,000	6.4	1,150

That index of mechanical horsepower per worker, for example, has amazing significance which is not fully appreciated. You know, of course, that no other country in the world remotely approaches the United States in the application of mechanical power. Back in 1929, when we had only 4.86 hp per worker, Germany had 2.6, Great Britain 2.56, Canada 2.17, Italy 2.14 and France only 1.78.

In this country the power applied per worker has now increased to 7.25 hp, which, by the way, is equivalent to the muscle power of 60 men, because a man develops only one-eighth of a horsepower.

Think of the cost of using the muscle power of 60 men at the rate of $1.42 per hr as compared with the cost of electrical energy at the rate of one cent per hp-hr. The ratio of cost is in the order of 1100 to 1!

That great advantage—that tremendous leverage which raises our relative living standard—is directly related to investment. In the 90 years between 1849 and 1939 the investment per worker in the United States increased 12 times.

As we think of the philosophy of individual freedom, of opportunity and incentive which characterized our national origin; as we think in terms of greatly multiplied power application and investment in our industries, it seems that an unmistakable and basic pattern is apparent.

That is one method of defining "the forces that make this incomparable Golconda of a country move." That is what has happened here. What really caused it? We talk about the philosophy of individual freedom of opportunity and incentive as the thing that characterized our national origin. But I wonder if there is not a more basic pattern upon which these factors were founded. What do we mean by individual freedom? What is the base for *that* idea? In *what* opportunity are we interested? And what incentives really are permanently workable?

Incentives For All

Some time ago I discussed such questions with an unusually well-informed British colonel, who had come to this country on an official mission after a tour of duty in India. I think his comment is very significant:

> "I should like to inject one or two comments into the correspondence at this point. Having just came back from 18 months in India, I am convinced that the reason why that country and presumably China, too, has such low living standards with great natural resources is largely a religious one. If you have a religion whose basis is that nothing that happens on this earth is of any importance at all, it is very hard to make people interested in even the most elementary improvement of their living standards while they are here."

That astute observation leads one to

the conclusion that, if a philosophy which provides neither motive nor incentive for improved living standards can retard the development of one country, a contrary philosophy which does provide motive and incentive for economic advancement can and has been a most important influence in the development of another country.

Anatomy of Americanism

I wonder if we can fully understand our American economic background and evolution without taking into account the profound interrelationship among the moral, social and political elements of our culture. I have a growing conviction that the economic evolution of any society is the by-product and natural outgrowth of more fundamental moral, social and political relationships.

Let's make a brief anatomical study of this intangible thing we call Americanism.

Understanding of anatomy develops from careful study of all elements of the body and of their relationships one with another. Let us, therefore, briefly consider the moral, social, political and economic aspects of Americanism. Each of these elements profoundly affects the others.

Americanism was founded upon and evolved from the Judaic-Christian moral code. Much of our early history was shaped by men and women who came to America seeking, primarily and above all things, freedom to worship according to conscience. They did not seek freedom from fear and want. Spiritual liberty was their goal.

Courageously they faced the most fearful conditions, including privation unlimited, as a price willingly to be paid for spiritual liberty. An old history tells the story of the Mayflower Pilgrims landing on the forbidding coast of New England in the dead of winter and losing half their number before spring came. Yet when the Mayflower went home, as the old writer says, "not a single Colonist went with her, so sweet was the taste of freedom even under the shadow of death."

From this compelling urge grew our American concepts of the dignity of the individual and of the state as the instrument and servant—not the master—of the people.

The social usages of Americanism have been characterized by individual freedom, by minimum legal restrictions, by great opportunities for advancement, rich rewards for accomplishment, by penalties limited to those imposed for undue interference with the liberties of others and by the individuals' own mistakes.

The editor of the *London Economist* recently remarked that "The human donkey requires either a carrot in front or a stick behind to goad him into activity." I think we all need *both* rather than "either." The degree of emphasis between the stick and the carrot is very important. Americanism emphasizes the carrot of incentive rather than the stick of compulsion.

Paul Hoffman, distinguished chairman of the Committee for Economic Development, has said:

"Our American system has traditionally offered rich rewards for hard work and creative thinking. . . . Few people work for work's sake. Most of us put forth our best efforts only as a result of pressure in the form of penalties for inaction and rewards for extra exertion. Rewards are the most powerful influence. In fact, psychologists have discovered that rewards have nine times the pulling power of penalties. . . . The Nazis found slave labor inefficient and wasteful."

Politically the anatomy of Americanism is defined by our Declaration of Independence and by our Constitution with its Bill of Rights. In these documents are reflected and recorded the moral and social concepts of a free people, resolved never to become the servants of the state.

The economic and industrial aspects of the American scene could not have come into existence except as an outgrowth of the moral, social and political elements of the national anatomy.

Anatomy of Communism

Now please observe the wholly different anatomy of Statism as exemplified by the Russian experiment in Communism.

The basis of Statism is unmoral. Marxianism discards all religious belief. Suppression of religious institutions is characteristic of all experiments in Statism. Dictators cannot function in an atmosphere of morality.

The social aspects of Statism are, of course, wholly consistent with the amoral basic philosophy. The people are slaves of the state. Individual freedom does not exist. Cruel compulsion and fantastic incentives are diabolically combined to motivate activity in all areas of endeavor. Non-conformity is punished by the firing squad or by relegation to the slave gang.

Politically the anatomy of Statism is characterized by ruthless minority domination of the masses. The dictator and his henchmen maintain absolute control through the secret police and the armed forces. Opposition in any form is not tolerated. "Constitutions," "elections" and "court procedures" are farcical instruments of political expediency, propaganda and trickery.

Statism has produced an economy of dire scarcity. Notwithstanding her great wealth of natural resources, her much-vaunted series of Five-Year Plans, her desperate efforts to industrialize her economy, Russia's economic history since the revolution of 1917 is a record of deterioration. A substantial body of evidence indicates that the Russian people under Statism have never attained a living standard as high as the deplorably low standard that existed under the imperial regime of the Czars.

Hence the "iron curtain." Statism cannot permit the people to know their sorry condition, nor can Statism safely permit outsiders to look upon its abominations.

Hence also Russia's wholesale seizure in the occupied territories of Germany, Manchuria and elsewhere. Deterioration of the Russian economy has forced the government to seize the accumulated property of other nations in order that Statism may continue to exist.

If we are to think clearly about these matters, we must not confuse our consideration of basic anatomy with the maladjustments, infections and lesions that distort the national anatomy. I think John Gunther's conception of the "mixedupness" of our national picture has developed from his extensive study of such maladjustments.

Notwithstanding the importance of such influences and the necessity for evaluating them as well as we may, I have found it helpful to keep in mind always a clear conception of our basically fine, strong, American anatomy which conforms to the requirements of unchangeable natural law.

Changing Trend

Many economic trends which we had come to regard as normal were interrupted by the depression which began in 1929 and by World War II. Vast political, social, economic, scientific and technological changes have taken place during the confused years that followed 1929. Complex interrelationships among these forces must be taken into account, and haphazard political policies have

raised new obstacles—obstacles which seem likely to prevent consistently improved productivity in the future.

Increased productivity results from cooperative action of innovators, investors, technicians, consumers, workers and management. Each responds to certain incentives. Each fails to cooperate in the absence of such incentives. In this republic each has the right and power to promote or obstruct the processes through which improved productivity may be attained.

The time at my disposal does not permit discussion of changes that have taken place in the status of the several groups. My comments are limited, therefore, to certain management-worker relationships.

Technological improvement of processing is an obvious and important element in increasing productivity, as is the steady increase in tools and machinery. But neither can be fully effective without the voluntary cooperation of workers.

In certain areas of activity, productivity has for many years been restricted by lack of worker cooperation. For example, the limitations which have been placed upon output by the building trades and by "featherbedding" practices of railway workers are quite generally understood. It is an unfortunate fact that similar restrictive practices during recent years have spread over greatly increased areas of the American economy. Thus, the motor car industry, which for many years had established new high standards of productive efficiency through continuous innovation and greatly increased investment in improved facilities of production, now suffers under the blight of reduced productive effort on the part of labor. Most of you probably are familiar with the statement of Henry Ford II that productivity of labor in the Ford plants had declined 34 per cent since 1941.

We Can Divide Only What We Produce

A few labor leaders are aware that the ultimate welfare of their constituents is dependent upon increased productive efficiency, but so far the effects of their exhortations have been negligible. Nonetheless, the emphasis that men like Dubinsky, Green, Lewis and Murray have placed upon the importance of productivity is mildly encouraging.

Labor leaders and management face the joint responsibility of carrying forward a great, sustained educational effort which will convince all Americans that we can divide only what we produce; that the welfare of workers, consumers and investors alike is dependent upon increased productive efficiency; and that the living standard must inevitably decline in consequence of reduced productive efficiency. All of us must learn to distinguish clearly between the meaningless *money* wage and the truly significant *real* wage. which takes into account the amount of goods that the money wage will buy.

Increased Mechanization

Among the compelling pressures that now stimulate management to increased mechanization and technological improvement in the processes of production, are fantastic increases in money wages, the abandonment or reduced effectiveness of incentive wages, the intransigence of many labor groups and an abundant supply of cheap money. Process engineers, tool designers and tool makers are now and will be in demand as never before. Innovation and invention will be at a premium without precedent.

The files of American industry already contain many plans and specifications for improved processing. Many of these were not economically feasible in the pre-war years because the resulting savings, calculated in terms of reduced productive labor costs, were not sufficient to justify the investment. As between 1939 and July, 1947, average industrial hourly wage rates have increased 87.8 per cent,* while output per man hour in many industries has decreased. When both wage increases and decline of productive efficiency are taken into account, many investments in labor-saving equipment which were unattractive in the pre-war period now assume very inviting aspects. notwithstanding increased equipment costs. The availability of money at low cost tends to offset increased capital requirements.

Man's muscular power is so costly that, even were Chinese coolie wages involved, we could not afford its purchase. We need man's directive ability to control the use of maximum mechanical power to the end that his productivity and real wages may continue to rise.

Again the voice of the technocrat will be heard in the land, and we must face the fact that definite hazards are involved in greatly accelerated mechanization of industrial processes. Dislocations, maladjustments and unemployment may develop, raising new problems in labor, social and political relationships. The already apparent trend toward concentration of capital and industrial operations may be greatly accelerated at the expense of small business.

Scarcity of Skill

As we consider the demand that is being placed upon our technicians and skilled workers to improve production processes, it should be noted that the scarcity of skilled craftsmen presents an extremely serious problem. The Apprentice-Training service of the Department of Labor estimates that there are only 200,000 apprentices now in training (half of them in the building trades). An authoritative estimate indicates that, in order to maintain *the 1940 level* of 5,400,000 skilled craftsmen, 619,000 apprentices must be kept in training continuously year after year. Few apprentices have entered training during the depression and war years. High wage levels, insistent demand for unskilled workers and reduced differentials between the earnings of unskilled workers and of those in the skilled trades tend to eliminate incentives for learning trade skills. In July, 1947, average hourly earnings of all male production workers in twenty-five manufacturing industries were $1.427 per hour, whereas skilled workers and semiskilled workers earned $1.493.* An increase in the order of 4 per cent is not a compelling incentive for entering apprentice training.

If this very difficult problem is not quickly solved, disastrous results may be expected. It should have the immediate, effective attention of the most capable men in all branches of industry.

Management a Trusteeship

The technical and economic aspects of productivity and manufacturing methods, vitally important as they are, must, in the final analysis, be recognized as resultants of human equations. I have said that man's mere muscular power is so costly that we cannot afford its purchase. But for his brain-power and heart-power and cooperative effort, price ceilings do not exist. Thoughtful management will concentrate increasing attention upon the art of dealing constructively with the several human groups and individuals whose

* September 15, 1947, bulletin—National Industrial Conference Board.

* National Industrial Conference Board.

interests it must serve if satisfactory productivity is to be achieved and maintained.

Modern business management is a trusteeship. It holds in trust the interests of three principal groups—consumers, employees and investors.

Failure to serve the interests of any one of these groups will result finally in injury to the others.

A very delicate balance is involved among these interests. Disturbance of that balance may endanger the entire economic structure. As Dr. Leo Wolman has said, "In this country we operate on an economic system that is a complex, sensitive and subtle system. It isn't easy to destroy, luckily, but it's easy to throw it out of gear. It's easy to impair its operations by a variety of means."

Each of the three groups—consumers, employees and investors—has the power to disturb the balance and to injure itself and its associated groups.

Now let's take a quick look at each of these groups in turn.

Consumer, the Ultimate Boss

The consumer is the ultimate authority. His money, exchanged for the products and services offered by business, supplies the means of meeting payrolls, purchasing materials, meeting all expense and earning profits (if any).

The consumer demands sound values according to *his own standards of value.* Values are a composite of quality, in the inclusive sense, and price. If quality does not appeal or price is too high, *according to the consumer's own personal standards,* he declines to buy. Failure of the consumer to buy can deprive employees of their jobs and can cause investors to lose, not only a reasonable return upon investments, but invested principal as well.

Moreover, every one of us is a consumer from the time of our birth until the day of our death. So long as we live under the Constitution of the United States no pressure group can prevail against consumers' ultimate interests because the *whole* always must be greater than any of its *parts.*

The consumer is the ultimate boss.

Since workers are also consumers, they live by working for each other.

Employees are more vulnerable than consumers and investors. The failure of a business may deprive the consumer of its products, but the consumer can find substitutes that will meet his needs.

Failure of a business will deprive investors of income and such capital as they may have invested. But investors may have other sources of income. Employees, however, lose their jobs when business fails. Loss of jobs means stoppage of income, and great distress may develop before the employee is reemployed, adjusted to new employment, and again the recipient of satisfactory and stable income. Since the worker is also a consumer, the loss of his job will affect other workers through his inability to buy their products or service.

The employee rightfully demands the highest *real wage* consistent with steady employment and the value of the service he renders. He knows that total annual income is much more important than the hourly rate, because his total annual income determines his real wages, and wage rates mean nothing until hours of actual work turn them into annual income. He wants good supervision, pleasant working conditions, and recognition as a human being who amounts to something in the enterprise. However, if, under misguided leadership, he demands a wage that results in prices too high for consumer acceptance or that results in depriving investors of proper safeguards to their investment or of a satisfactory return thereon, he disturbs the balance and may deprive himself of employment.

Modern management strives diligently to pay employees the highest wage consistent with the requirements of labor's boss, the consumer, and labor's partner, the investor.

Labor's Partner, the Investor

The investor eats at the last table. After all wages and salaries have been paid; after all bills for material have been paid; after all taxes and other expenses have been taken into account, the investor *may* receive some return upon his investment *if anything remains.*

The investor requires two things to induce him to risk his money to purchase the tools of enterprise. These are (1) safety of his investment and (2) a reasonable return upon his investment. If either of these reasonable requirements are not to be had, he is naturally unwilling to invest, and that decision deprives the worker of tools and the consumer of goods and services. The result is *reduced employment* and lowered standards of living.

During recent years organized labor has occupied the limelight and built up its power, at the expense of consumers and investors. For that reason many of us have forgotten that the right and power to exert economic pressure by refusing to cooperate does not belong exclusively to labor.

The economic machine can be stalled just as effectively by labor's boss—the consumer—as by labor. Have we forgotten the "buyers' strike" of 1920, when thousands of Americans wore overalls to emphasize their unwillingness to pay inflated prices? Does no one remember the serious unemployment that followed our post-war inflation only 26 years ago?

Labor's partner—the investor—has the same right and power to strike and thereby to impede economic progress.

Business enterprise, caught between the upper millstone of suppressed prices and the lower millstone of rising costs, cannot long continue to retain the support of investors, and when adequate financial support is withdrawn management can no longer contribute to the consumer's need for goods and services nor furnish the pay envelope of employees. Management must see to it that each of the groups, consumers, employees and investors, does it fair share in production and is fairly compensated for services performed.

There, simply summarized, are the obligations of modern management and the implications that are involved in those responsibilities with respect to consumers, labor and investors.

For Better Understanding

Many years ago H. G. Wells characterized civilization as a "race between education and catastrophe." Since those words were written, economic and social complexities have developed so rapidly that the need for mutual understanding and particularly for understanding on the part of management of the viewpoints of consumers, labor, investors and all of the other groups in our complex social structure is greater than ever before.

It seems to be incumbent upon businessmen not only to understand the viewpoints of workers, consumers and investors but to bring these groups to understand the mutuality of their interests, their great common stake in preserving individual freedom, opportunity and incentives, as well as the true functions of business management in serving their interests. Our economic structure cannot be preserved without the cooperation of

these groups, and only mutual understanding can insure such cooperation.

Where Do We Go From Here?

"Mixedupness" is very evident in our country's present economic condition. Pre-war measuring sticks fail to give us convincing answers. Post-war economic patterns are strangely unlike the patterns we knew before the war. Many former guide posts and traffic signals have gone with the winds of war.

Prophecies put out by members of the Crystal Gazers' Union vary all the way from forecasts of long-continued, high level business, employment and profits to dire predictions of early economic collapse.

There are all sorts of crazy price distortions. Costs of farm products and construction have advanced fantastically. Prices of manufactured goods are less inflated than they were after World War I.

Of course, there must be readjustments. In all likelihood, costs and prices eventually will be stabilized at levels substantially above pre-war costs and prices.

The crucial question seems to be whether we can achieve economic stability without a serious depression like the post-war slump of 1920-21 or the collapse of 1929.

Many thoughtful economists believe that orderly readjustment is quite possible. F. D. Newbury, Westinghouse economist, believes that much-publicized unfavorable factors, like high prices, building recession and the stock market slump, are greatly outweighed by such favorable factors as the enormous supply of credit and money, the heavy demand for durable goods and large investments in capital formation.

We can be very certain that we can't have 1941 prices with 1947 dollars. We cannot have cheap money and cheap goods at the same time. As my friend James D. Mooney, president of Willys-Overland Motors, Inc., has pointed out:

"Most of the talk, official, and otherwise, that we hear over the radio or read in the newspapers on the subject of high prices is as pernicious as it is unrealistic. . . . Just at this time this is a peculiarly harmful disservice to America in that it promotes disunity and misunderstanding when what we need is for all segments of our society to unite in the common battle against inflation. And it is a common battle—for nobody benefits from inflation—neither consumer nor labor nor management nor government."

Most members of the Crystal Gazers' Union still are highly isolationist in their thinking. As never before, our own economy is being influenced by "foreign affairs" that are no longer foreign to the American "butcher, baker and candlestick maker." No one can safely predict long and short-term trends in our domestic affairs until he has carefully appraised probable events in Russia, in western Europe, in Greece and Turkey, in India, China, Japan—and for that matter in the Arctic and Antarctic regions.

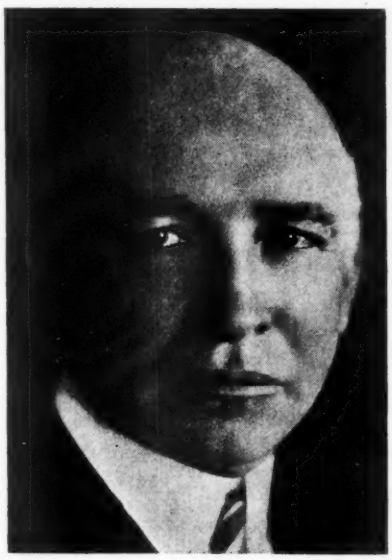
Indisputably we live in "one world"—its human groups at the moment distressed, suspicious, quarrelsome, highly explosive. Like atomic energy, world forces are both explosive and cohesive. Our national future seems to depend upon our ability quickly and effectively to bring about the dominance of cohesive components—economic, social and political.

Prophecies as to our economic future probably could be made simply and accurately if the vagaries and cussedness of human nature were predictable. Frequently the estimates of our best economists have been upset by unexpected psychological reactions. Such unpredictable human behavior is quite likely to determine the issue which will develop from present economic distortions which somehow must move toward greater equilibrium.

We may well consider the advice of the wise old Athenian, Isocrates, who lived from 436 to 338 B. C. and who said, "Remember that there is nothing stable in human affairs; therefore, avoid elation in prosperity and undue depression in adversity."

Herbert A. Wagner

HERBERT APPLETON WAGNER, former president and chairman of the board of the Consolidated Gas, Electric Light and Power Company of Baltimore, died Dec. 5, in the Union Memorial Hospital, Baltimore, Md., after a short illness. Mr. Wagner was 80 years of age.



Mr. Wagner

A pioneer in the electrical industry, he built up a great manufacturing company and developed a large electric operating company. Mr. Wagner was a member of the board of trustees of the Edison Electric Institute until his retirement in 1943. He was president of the National Electric Light Association in 1916-1917. For the greater part of his business life he took active interest in the affairs of the EEI and its predecessor organization, making many valuable contributions to their usefulness.

Mr. Wagner was born Feb. 24, 1867, in Philadelphia, Pa., and was graduated with the degree of mechanical engineer from the Stevens Institute of Technology in 1887. The following year he became general superintendent of the Missouri Edison Company at St. Louis, Mo., and in 1891 organized and became the first president of the Wagner Electric Manufacturing Company at St. Louis.

From 1900 until 1910 he was engaged in private practice as a consulting engineer in New York, thereafter becoming vice president of the Consolidated Gas Electric Light and Power Company of Baltimore, in which capacity he served until elected president in 1915; on March 21, 1939, he was elected chairman of the board and president. He resigned as president March 26, 1942, and resigned as chairman of the board May 27, 1943.

He was the honorary chairman of the board of trustees of the Maryland Academy of Sciences, a trustee of the Stevens Institute of Technology, the

(*Continued on page* 459)

Utilities Having Radio Licenses or Construction Permits

Electric, gas and water utilities and petroleum companies having radio licenses or construction permits under the Utility Radio Service or Special Emergency Service as of November 20, 1947 are shown in the following list, in which the utilities and petroleum companies are grouped separately. The total number of 437 compares with 246 on December 15, 1946 as listed in the February 1947 issue of the BULLETIN.

The Federal Communications Commission held hearings November 17-21 on its proposal to make additional channels available to the non-government mobile services by reallocating for this purpose one television band. At the time of going to press, the Commission's decision had not yet been announced but it is rather generally expected to be favorable to the Mobile Services. If so, a new hearing will be called regarding the allocation of these channels among the various mobile services.

UTILITIES

Adams Elec. Light Co., New York
Adams-Marquette Elec. Coop., Wisconsin
Aiken Elec. Coop., South Carolina
Alabama Elec. Coop., Alabama
Alabama Power Co., Alabama
Alcorn County Elec. Power Assn., Mississippi
Allamakee-Clayton Elec. Co., Iowa
Altamaha Elec. Membership Corp., Georgia
Anoka County Coop. Light & Power Assn., Minnesota
Appalachian Elec. Power Co., West Virginia
Arkansas Power & Light Co., Arkansas
Arkansas-Western Gas Co., Kansas
Atlanta Gas Light Co., Georgia
Atlantic City Elec. Co., New Jersey
Atlantic Seaboard Corp., Maryland

Baker Elec. Coop., North Dakota
Barron County Elec. Coop., Wisconsin
Bartholomew Co. Rural Elec. Membership Corp., Indiana
Barton County Elec. Coop., Missouri
Beaumont, Texas, City of
Belmont Elec. Coop., Ohio
Benton County Public Utility District, Washington
Birmingham Gas Co., Alabama
B-K Elec. Coop., Texas
Blackstone Valley Gas & Elec. Co., Rhode Island
Black Hills Power & Light Co., South Dakota
Blue Ridge Elec. Membership Corp., North Carolina
Boone County Rural Elec. Membership Corp., Indiana
Boston Consolidated Gas Co., Massachusetts
Boston Edison Co., Massachusetts
Brazos River Trans. Elec. Corp., Texas
Brockton Edison Co., Massachusetts
Brooklyn Union Gas Co., Brooklyn, New York
Buena Vista County REA Coop., Iowa
Buffalo Elec. Coop., Wisconsin
Buffalo, City of, Division of Water, New York
Buffalo Niagara Elec. Corp., New York
Butler County Rural Elec. Coop., Iowa

Caddo Elec. Coop., Oklahoma
Calhoun County Elec. Coop. Assn., Iowa
California Elec. Power Co., California
California-Oregon Power Co., Oregon
Callaway Elec. Coop., Missouri
Cambridge Elec. Light Co., Massachusetts
Canadian River Gas Co., Texas
Cap Rock Elec. Coop., Texas
Cape & Vineyard Elec. Co., Massachusetts
Capital Elec. Power Assn., Massachusetts
Carolina Power & Light Co., North Carolina
Carroll County Rural Elec. Membership Corp., Indiana
Carroll Elec. Coop., Ohio
Carroll Elec. Membership Corp., Georgia
Central Arizona Light & Power Co., Arizona
Central Elec. Coop., Pennsylvania
Central Elec. Federated Coop. Assn., Iowa
Central Hudson Gas & Elec. Corp., New York
Central Louisiana Elec. Co., Louisiana
Central Massachusetts Elec. Co., Massachusetts
Central Missouri Elec. Coop., Missouri
Central New York Power Corp., New York
Central Power & Light Co., Texas
Central Valley Elec. Coop., New Mexico
Central Vermont Public Service Corp., Vermont
Chattanooga, City of, Tennessee
Cherokee Elec. Coop., Alabama
Chicopee Elec. Light Co., City of, Massachusetts
Choptank Elec. Coop., Maryland
Claiborne Elec. Coop., Louisiana
Clark Elec. Coop., Wisconsin
Clay County Elec. Coop. Corp., Arkansas
Clay Elec. Coop., Florida
Clay-Union Elec. Corp., South Dakota
Cleveland Elec. Illuminating Co., Ohio
Coahoma Elec. Power Assn., Mississippi
Coast Counties Gas & Elec. Co., California
Colorado Central Power Co., Colorado
Colorado Interstate Gas Co., Colorado
Columbia, City of, Tennessee
Columbus, City of, Ohio
Columbus & Southern Ohio Elec. Co., Ohio
Commonwealth Edison Co., Illinois
Concordia Elec. Coop., Louisiana
Connecticut Light & Power Co., Connecticut
Consolidated Edison Co., New York
Consolidated Electric Coop., Missouri
Consolidated Gas, Elec. Light & Power Co., Maryland
Cooke County Elec. Corp., Texas
Corn Belt Elec. Coop., Illinois
Cooperative Elec. Co., Iowa
Cullman Elec. Coop., Alabama
Cumberland Elec. Membership, Tennessee

Dairyland Power Coop., Wisconsin
Dallas Power & Light Co., Texas
Dayton Power & Light Co., Ohio
Delaware Power & Light Co., Delaware
Detroit Edison Co., Michigan
Dixie Elec. Membership Corp., Louisiana
Douglas County Coop. Light & Power Assn., Minnesota
Douglas County Elec. Membership Corp., Georgia
Duquesne Light Co., Pennsylvania

East Central Elec. Assn., Minnesota
Eastern Iowa Light and Power Coop., Iowa
Edgar Elec. Coop., Assn., Illinois
Egyptian Elec. Coop. Assn., Illinois
Empire District Elec. Co., Missouri
Empire Elec. Assn., Colorado
Erath County Elec. Coop., Texas
Eugene, City of, Oregon
Everett, City of, Washington
Excelsior Elec. Membership Corp., Georgia
Exeter & Hampton Elec. Co., New Hampshire

Fairfield Elec. Coop., South Carolina
Farmers Rural Elec. Coop., Kentucky
Fitchburg Gas & Elec. Light Co., Massachusetts
Fleming-Mason Rural Elec. Coop., Kentucky
Florence, City of, Alabama
Florida Power Corp., Florida
Florida Power & Light Co., Florida
Fontana Union Water Co., California
Forked Deer Elec. Coop., Tennessee
Four-County Elec. Power Assn., Mississippi
Freeborn-Mower Coop., Light & Power Assn., Minnesota
Fruit Belt Elec. Coop., Michigan
Fulton County Rural Elec. Membership Corp., Indiana

Georgia Power Co., Georgia
Gibson County Elec. Membership Corp., Tennessee
Godfrey L. Cabot Corp., West Virginia
Grand River Dam Authority, Oklahoma
Grand Valley Rural Power Lines, Colorado
Grant Elec. Coop., Wisconsin
Green River Rural Elec. Coop., Kentucky
Guernsey-Muskingum Elec. Coop., Ohio
Gulf Power Co., Florida
Gulf States Utilities Co., Texas

Hancock-Wood Elec. Coop., Ohio
Harmon Elec. Assn., Oklahoma
Harrison County Rural Elec. Coop., Kentucky
Hart County Elec. Membership Corp., Georgia
Hartford Elec. Light Co., Connecticut
Hawkeye Tri-County Elec. Coop., Iowa
Henderson-Union Rural Elec. Coop., Kentucky
Hickman-Fulton County Rural Elec. Coop., Kentucky
Hill County Elec. Coop., Texas
Holston Elec. Coop., Tennessee
Holyoke Water Power Co., Massachusetts
Home Gas & Elec. Co., Colorado
Hope Natural Gas Co., West Virginia
Houston Industrial Gas Co., Texas
Houston Light & Power Co., Texas
Humbolt County Rural Elec. Coop., Iowa
Huntington County Rural Elec. Membership Corp., Indiana

Ida County Rural Elec. Coop., Iowa
Idaho Power Co., Idaho
Illinois Elec. & Gas Co., Illinois
Indian Empire REA Corp., Washington
Indiana & Michigan Elec. Co., Indiana
Indiana Service Corp., Indiana
Indianapolis Power & Light Co., Indiana
Inland Empire REA Corp., Washington
Inter-County Rural Elec. Coop., Ohio
Interstate Power Co., Iowa
Iowa Elec. Light & Power Co., Iowa
Iowa-Illinois Gas & Elec. Co., Illinois
Iowa Power & Light Co., Iowa
Iroquois Gas Corp., New York
Irwin County Elec. Membership Corp., Georgia

Jackson County Rural Elec. Membership Corp., Indiana

Jackson Elec. Coop., Texas
Jacksonville, City of, Florida
Jefferson Davis Elec. Coop., Louisiana
Jersey Central Power & Light Co., New Jersey
Jump River Elec. Coop., Wisconsin

Kankakee Valley Rural Elec. Membership Corp., Indiana
Kansas City Power & Light Co., Missouri
Kansas Gas & Elec. Co., Kansas
Kansas-Nebraska Natural Gas Co., Nebraska
Kay Electric Coop., Oklahoma
Kentucky & West Virginia Power Co., Kentucky
Kentucky Utilities Co., Kentucky
Knoxville, City of, Tennessee
Kootenai Rural Elec. Assn., Idaho

LaFollette, City of, Tennessee
Lafayette Elec. Coop., Wisconsin
Lamar, City of, Colorado
Lamar County Elec. Coop., Texas
Laurence Elec. Coop., South Carolina
Lawrence Gas & Elec. Co., Massachusetts
Lincoln Elec. Coop., Washington
Linn County Rural Elec. Coop., Iowa
Little Ocmulgee Elec. Membership Corp., Georgia
Little Rock, City of, Municipal Waterworks, Arkansas
Lodi Power & Light, Village of, Ohio
Long Island Lighting Co., New York
Lorain Medina Rural Elec. Coop., Ohio
Los Angeles Dept. of Water & Power, City of, California
Louisiana Power & Light Co., Louisiana
Louisville Gas & Elec. Co., Kentucky
Lowell Elec. Light Corp., Massachusetts
Lowell Gas Light Co., Massachusetts
Lower Colorado River Elec. Coop., Texas
Lynn Gas & Elec., Massachusetts
Lyntegar Elec. Coop., Texas

Macon Elec. Coop., Missouri
Magic Valley Elec. Coop., Texas
Magnolia Elec. Power Assn., Mississippi
Manufacturers Light & Heat Co., Pennsylvania
Marshall County Rural Elec. Coop., Iowa
Marshfield, City of, Wisconsin
McLeod Coop. Power Assn., Minnesota
Meade County Rural Elec. Coop., Kentucky
Memphis, City of, Tennessee
Menard Elec. Coop., Illinois
Metropolitan Edison Co., Pennsylvania
Miami-Cass County Rural Elec. Membership Corp., Indiana
Michigan Consolidated Gas Co., Michigan
Middle Tennessee Elec. Membership Corp., Tennessee
Midwest Electric, Ohio
Mid-Yellowstone Elec. Coop., Montana
Minneapolis Gas & Light Co., Minnesota
Minnesota Power & Light Co., Minnesota
Minnkota Power Coop., North Dakota
Mississippi Power Co., Mississippi
Mississippi Power & Light Co., Jackson, Miss.
Mitchell County Elec. Membership Corp., Georgia
Modesto Irrigation District, California
Monongahela Power Co., West Virginia
Montana Power Co., Montana
Morgan County Rural Elec. Membership Corp., Indiana

Narragansett Elec. Co., Rhode Island
Natural Gas Pipeline Co. of America
Nevada Irrigation District
New Bedford Gas & Edison Light Co., Massachusetts
New England Power Co., Massachusetts
New Jersey Power & Light Co., New Jersey
New-Mac Elec. Coop., Missouri
New Orleans Public Service Co., Louisiana
New York State Elec. & Gas Corp., New York
New York State Natural Gas Corp.
Niagara Falls Power Co., New York
Noble County Rural Elec. Membership Corp., Indiana
Nodak Rural Elec. Coop., Inc., North Dakota
Northeast Oklahoma Elec. Coop., Ind., Oklahoma
Northern Indiana Public Service Co., Indiana
Northern Natural Gas Co.
Northern Piedmont Elec. Coop., Virginia
Northern States Power Co., Minnesota
Northwestern Elec. Co., Oregon
Nuesces Elec. Coop., Texas

Oakdale Coop. Elec. Assn., Wisconsin
Ohio Edison Co., Ohio
Ohio Fuel Gas Co., Ohio
Ohio-Midland Light & Power Co., Ohio
Ohio Power Co., Ohio
Ohio Public Service Co., Ohio
Okanogan County Public Utility District, Washington
Oklahoma City Water Dept., Oklahoma
Oklahoma Gas & Elec. Co., Oklahoma
Owen County Rural Elec. Coop., Kentucky
Ozark Rural Elec. Coop., Arkansas

Pacific Gas & Elec. Co., California
Pacific Lighting Corp., California
Pacific Power & Light Co., Washington
Panhandle Eastern Pipe Line Co.
Pasadena, City of, California
Pedernales Elec. Coop., Texas
Pella Coop. Elec. Assn., Iowa
Pemiscot-Dunklin Elec. Coop., Missouri
Pennsylvania Elec. Co., Pennsylvania
Pennsylvania Power and Light Co., Pennsylvania
Pennyrile Rural Elec. Coop., Kentucky
Peoples Coop. Power Assn., Minnesota
Peoples Natural Gas Co., Pennsylvania
Perry, J. A., DBA Westwood Water Utility Co., Arizona
Philadelphia Elec. Co., Pennsylvania
Pickwick Elec. Membership Corp., Tennessee
Piedmont Elec. Membership Corp., North Carolina
Pierce-Pepin Elec. Coop., Wisconsin
Pioneer Rural Elec. Coop., Ohio
Planters Elec. Membership Corp., Georgia
Plymouth County Elec. Co., Massachusetts
Plymouth Elec. Coop. Assn., Iowa
Pocahontas County Rural Elec. Coop., Iowa
Pointe Coupee Elec. Membership Corp., Louisiana
Polk-Burnett Elec. Coop., Wisconsin
Portland Gas & Coke Co., Oregon
Portland General Elec. Co., Oregon
Potomac Elec. Power Co., D. C.
Provincetown Light & Power Co., Massachusetts
Public Service Co. of Colorado, Colorado
Public Service Co. of Indiana, Inc., Indiana
Public Service Co. of New Hampshire, N. H.
Public Service Co. of Oklahoma, Oklahoma
Public Service Elec. & Gas Co., New Jersey
Public Utility District No. 1, Washington
Puerto Rico Water Resources Authority, P. R.
Puget Sound Power & Light Co., Washington

Queens Boro Gas & Elec. Co., New York

Randolph Elec. Membership Corp., North Carolina
Rochester Elec. Dept., Minnesota
Rochester Gas & Elec. Corp., Rochester, N. Y.
Rockland Light & Power Co., New York
Roosevelt County Elec. Coop., New Mexico
Rosslyn Gas Co., Virginia
Rural Coop. Power Assn., Minnesota
Rush County Rural Elec. Membership Corp., Indiana
Rutherford Elec. Membership Corp., North Carolina

SAC County Rural Elec. Coop., Iowa
Sacramento Municipal Utility District, California
Safe Harbor Water Power Corp., Pennsylvania
St. Joseph Light & Power Co., Missouri
St. Petersburg, City of, Florida
San Antonio, City of, Texas
San Bernard Elec. Coop., Texas
San Diego Gas & Elec. Co., California
San Patricio Elec. Coop., Texas
Sand Mountain Elec. Coop., Alabama
Satilla Elec. Membership Corp., Georgia
Savannah Gas Co., Georgia
Scott-New Madrid-Mississippi Elec. Corp., Missouri
Scranton Elec. Co., Pennsylvania
Seattle, City of, Dept. of Light, Washington
Sekan Elec. Coop. Assn., Kansas
Sevier County Elec. System, Tennessee
Shelby Elec. Coop., Illinois
Shelby Rural Elec. Coop., Kentucky
Singing River Elec. Power Assn., Mississippi
Sioux Valley Empire Elec. Assn., South Dakota
South Atlantic Gas Company, Georgia
South Carolina Elec. & Gas Co., South Carolina
South Carolina Power Co., South Carolina
South Central Rural Elec. Coop., Ohio
South Jersey Gas Co., New Jersey
Southern Colorado Power Co., Colorado
Southeast Colorado Power Assn., Colorado
Southeastern Indiana Power Co., Indiana
Southeastern Indiana Rural Elec. Membership Corp., Indiana
Southern California Edison Co., California
Southern California Gas Co., California
Southern Colorado Power Co., Colorado
Southern Counties Gas Co., California
Southern Illinois Elec. Corp., Illinois
Southern Natural Gas Co., Alabama
Southern Plains Elec. Coop., Texas
Southside Elec. Coop., Virginia
Southwest Central Rural Elec. Coop., Pennsylvania
Southwest Louisiana Elec. Membership Corp., Louisiana
Southwestern Gas & Elec. Co., Texas
Southwestern Public Service Co., Texas
Stearns Coop. Elec. Assn., Minnesota
Steel Waseca Coop. Elec., Minnesota
Stevens County Elec. Coop., Washington
Suburban Natural Gas Corp., Oklahoma
Sumter Elec. Coop., Florida
Suwannee Valley Elec. Coop., Florida

Tacoma, City of, Washington
Tallahatchie Valley Elec. Power Assn., Mississippi
Tallapoosa River Elec. Coop., Alabama
Tampa Elec. Co., Florida
Taylor Elec. Coop., Texas
Tennessee Gas & Transmission Co., Tenn.
Texas Elec. Service Co., Texas
Texas Power & Light Co., Texas
Taxoma Natural Gas Co., Texas
Tipmont Rural Elec. Membership Corp., Indiana
TIP Rural Elec. Coop., Iowa
Tishomingo County Elec. Power Assn., Mississippi
Toledo, City of, Ohio
Toledo Edison Co., Ohio
Trempealeau Elec. Coop., Wisconsin
Tri-County Elec. Membership Corp., Tennessee
Tri-County Elec. Coop., Michigan

Tri-County Elec. Coop., Minnesota
Tri-County Elec. Coop. Assn., Missouri
Tulsa, City of, Oklahoma
T. W. Phillips Gas & Oil Co., Pennsylvania

Uncompahgre Valley Water Users Assn., Colorado
Union Elec. Power Co., Illinois
Union Elec. Co. of Missouri, Missouri
Union Gas System, Inc., Kansas
United Cities Utilities Co.
United Gas Pipe Line Co., Louisiana
United Illuminating Co., Connecticut
United Natural Gas Co., Pennsylvania
Upper Cumberland Elec. Membership Coop., Tennessee
Utilities District of Western Indiana, Indiana

Vernon County Elec. Coop., Wisconsin
Virginia Gas Transmission Corp., Virginia

Washington Electric Coop., Ohio
Washington Gas Light Co., D. C.
Washington Gas Light Co. of Md., Ind., Maryland
Washington-St. Tammany Elec. Coop., Louisiana
Washington Water Power Co., Washington
Wayne County Rural Elec. Membership Corp., Indiana
Western Massachusetts Elec. Co., Massachusetts
West Florida Elec. Coop. Assn., Florida
West Kentucky Rural Elec. Coop. Corp., Kentucky
West Oregon Elec. Coop., Oregon
West Penn Power Co., Pennsylvania
Westwood Water Utility Co., Arizona
Wheeling Elec. Co., West Virginia
White County Rural Elec. Membership Corp., Indiana
Whitley County Rural Elec. Membership Corp., Indiana
Wild Rice Elec. Coop., Minnesota
Winnebago Rural Elec. Coop., Iowa
Wisconsin Elec. Power Co., Wisconsin
Wisconsin Gas & Elec. Co., Wisconsin
Wisconsin-Michigan Power Co., Wisconsin
Woodruff Elec. Coop. Corp., Arkansas
Worcester County Elec. Co., Massachusetts
Wright-Hennepin Coop. Elec. Assn., Minnesota

PETROLEUM COMPANIES

American Petroleum Corp.
Amerada Petroleum Corp.
The California Co., Louisiana
California Pipe Line Co., Wyoming
Carl B. King Drilling Co., Texas
Continental Pipe Line Co., Texas
Great Lakes Pipeline Co.
Humble Pipe Line Co., Texas
Humble Oil & Refinery Co., Louisiana
Interstate Oil Pipe Line Co., Oklahoma
J. M. Huber Corp., Texas
Magnolia Petroleum Co.
Norwood Drilling Co.
Pan American Pipeline Co., Texas
Plantation Pipe Line Co., Georgia
Rogers Lacy Inc., Texas
Salt Lake Pipe Line Co., Utah
Shamrock Oil & Gas Corp., Texas
Sinclair Prairie Oil Co.
Sohio Pipe Line Co., Michigan
Stanolind Pipe Line Co., Oklahoma
Star Oil Co., Inc.
Texas Pipeline Co., Louisiana
Warren Petroleum Corp., Texas

"The Half Was Not Told"

(*Continued from page* 442)

Charlie Walters has done well the job which he has held so long. The directors of his company bore witness to his loyalty and efficiency when they decided to name this plant—the pride of the company's far-flung system—after him.

What Charlie Walters has done with efficiency he has also done with humanness. Industrial management is sometimes too impersonal. In its ceaseless search for cheap production, it often forgets to be human. Measuring itself too much by sales and profits, it overlooks the human factor of the product which it manufactures, the service which it renders, the obligation which it owes to its employees.

Charlie Walters has never been so intent on the inevitable materialism of industry that he ceased being a great humanist. He has kept his business always on the human basis. He has been richly rewarded by the fact that the customers of the Carolina Power and Light Company have continued to regard the corporation as an intensely human enterprise.

This is no small feat in industrial leadership. It betrays the true worthiness of the man.

Hithertofore, this plant has borne the singularly inappropriate name of Waterville. There is, to be sure, much water here but you will look in vain for the ville. There will probably never be a ville here. The work of this plant lies elsewhere—in scores of communities throughout this region.

Henceforth, it will bear an appropriate and honored name. Most of us, however, will not be satisfied to call it the Walters Hydroelectric Plant. We will wish to speak of it as the Charlie Walters' plant. That is to say, we will speak of it in that more intimate way if we happen to be among his contemporaries in point of time. The younger people will, I suspect, call it Uncle Charlie Walters' Plant for to hundreds of the younger citizens of Asheville and of western North Carolina he is Uncle Charlie. That title of uncle is not so much a commentary on his age as on his avuncular traits. He is so considerate of young people, never patronizing them, always seeking to help them.

A great hydroelectric plant takes on today a good name—a name that the owner has made synonymous with integrity and love of his fellow-men. The plant itself, failing some vast convulsion of nature or some other historic disaster, will endure long after those of us assembled here on this happy occasion have passed on. I close with a hope that, I know, is in the hearts of all of you—the earnest hope that Charlie Walters may be long spared to all of us who have found in him so much to love and to admire and who are inexpressibly happy today in the honor, the wholly deserved honor, that comes to him.

J. Herbert Walker

J. HERBERT WALKER, a vice president of The Detroit Edison Company, died at his home in Birmingham, Mich., after a severe illness, on December 1, 1947. He was 57 years of age. Mr. Walker had been an engineer-executive of the company for many years, and was first employed by the company in 1912. He was elected a vice president in 1945. Previously Mr. Walker was assistant to the general manager and was active in organization planning and as a consultant on various commercial and engineering problems.

Mr. Walker was a mechanical engineer who graduated from the University of Michigan in 1911 and obtained his masters degree in engineering in 1937. In recent years he had the responsibility for personnel matters of the company, which included employment, personnel planning, medical, safety and legal departments.

In November of this year he was given the F. Paul Anderson Award by the American Society of Heating and Ventilating Engineers for outstanding scientific achievement in the field of heating and air conditioning. He achieved national recognition in this field and was for many years superintendent of the central heating department which supplies steam to the principal buildings in downtown Detroit. He was the author of books and technical articles in this field.

Wisconsin Utilities Hold Joint Gas and Electric Convention

MORE than 425 delegates registered at the joint convention of the Commercial and Technical Divisions of the Electric and Gas Sections of the Wisconsin Utilities Association in the Schroeder Hotel, Milwaukee, Nov. 19, 20 and 21. This was the first convention of these Sections since 1941, and the first such combination session in the history of the organization. Heretofore each Section held its own convention.

Subjects of general interest to the two Sections were presented by E. C. Brenner, president of the Association; G. C. Neff, president of Wisconsin Power & Light Co.; G. V. Rork, president of Northern States Power Co.; Louis Ruthenburg, president, Servel, Inc.; Professor F. W. Duffee, chairman, Agricultural Engineering Dept., University of Wisconsin; Attorney F. H. Prosser and E. Carl Sorby, vice-president, Geo. D. Roper Corp.

Mr. Brenner told the convention that Wisconsin Utilities Association electric member companies have on order with manufacturers 417,000 kw, or 656,000 hp, of generating capacity which will cost them more than $63,000,000.

This record-breaking installation is being placed in service in the next three years to catch up with expansion programs that could not be carried out due to government restrictions imposed during the war, to postwar shortages of material with which to manufacture generating facilities, and to slow delivery by manufacturers whose production was obstructed by strikes.

Mr. Brenner added: "While I have stated that public utilities have generally reduced the cost of their services even during these times when other costs of living have been greatly increased, I would be derelict in my duty if I did not state that higher costs of material and labor have arrested the downward trend of utility service rates and are making it more and more necessary to consider increases in these rates. Much of the new equipment which has been installed and which is on order is costing the companies nearly twice as much as the same type of equipment cost before the war. Consequently, the trend in utility rates, particularly for gas service, at least until natural gas is introduced when gas rates will be reduced, is definitely on the increase rather than the decrease."

Mr. Neff emphasized that the most serious threat to the successful working of the free enterprise system comes from government itself. Having had a system under which this country, in a relatively few decades, has become the envy and wonder of the whole world, we now find our government in active and unfair competition with the governed. Complicated, confusing, unnecessary regulation and high taxation of the enterpriser, while tax-financed but virtually tax-free agencies of the government directly compete with him, make enterprise no longer free. Figuratively, they tie one hand of previously free enterprise behind its back. Such unfair competition dulls the enthusiasm of the inventor and investor. Men become less anxious to assume the risks of starting new undertakings, and the whole tempo of free enterprise slows down. It is a most destructive policy, and the results can be very disastrous.

Increased productive efficiency, according to Louis Ruthenburg, president, Servel, Inc., will have to offset the increase in average industrial hourly wage rates before there can be any rise in real wages. "Labor leaders and management," he said, "face the joint responsibility of carrying forward a great, sustained educational effort which will convince all Americans that we can divide only what we produce; that the welfare of workers, consumers and investors alike is dependent upon increased productive efficiency; and that the living standard must inevitably decline in consequence of reduced productive efficiency."

E. C. Sorby of the G. D. Roper Corp., emphasized the constructive side of selling and advocated more inspirational leadership. "Peacetime progress does not just happen," he said. "Selling organizations make it happen. There has constantly been a never-ending desire on the part of all of us who plan sales to improve our way of life and bring about a freedom that is really lasting—freedom from work and worry and nerve strain, and freedom from guess work," he added.

Gas and electric engineers began their part of the joint convention of the Wisconsin Utilities Association with individual sessions on Nov. 19, and closed their conference with joint meetings with the Commercial Divisions of the Electric and Gas Sections, Nov. 20.

Speakers at the Electrical Technical sessions, at which A. G. Pergande, chairman, presided, included: R. B. Zane, Okonite Cable Co.; W. B. Tucker, Allis-Chalmers Mfg. Co.; Erle S. Miner, American Telegraph & Telephone Co.; Fay Morgan, Wisconsin Telephone Co.; N. E. Dillow, General Electric Co.; and Carl H. Asplundh, Asplundh Tree Expert Co.

Engineering papers and discussions were devoted to the methods to improve dependability of service, increase production capacities and to cut operating costs. Approximately 250 technical representatives of the major electric and gas companies participated in the meetings.

Speaking to the Commercial sections at the Convention were: H. Vinton Potter, director, New Freedom Gas Kitchen Bureau of the A. G. A.; G. V. Rork, president of Northern States Power Co.; F. A. Kaiser, assistant president of Detroit-Michigan Stove Co.; C. W. Bloedorn, Allis-Chalmers Mfg. Co.; J. M. Rushton, manager of the publicity division of Frigidaire, General Motors Corp.; W. H. Roth, president of Roth Appliance Distributors, Inc.; C. C. Simpson, managing director, National Electrical Retailers Association; J. D. Howard, general sales manager, Wisconsin Power & Light Co.; A. J. Von Burg, rural sales manager, Wisconsin Power & Light Co.; and James T. Coatsworth, commercial director of the EEI.

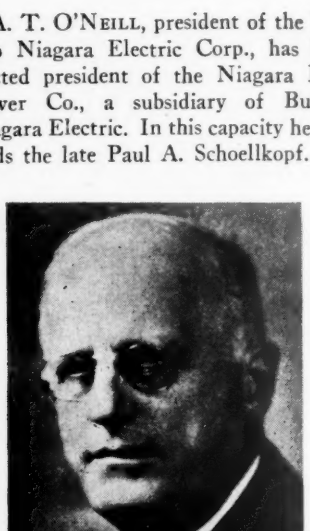
R. A. Krueger, Wisconsin Public Service Corp., Wausau, was elected chairman of the Technical Division of the Electric Section. J. S. Wells, Wisconsin Michigan Power Co., Appleton, was elected vice-chairman.

G. H. Head, Wisconsin Gas & Electric Co., Racine, was elected chairman of the Technical Division of the Gas Section, and H. K. French, Jr., Wisconsin Fuel & Light Co., Manitowoc, vice-chairman.

J. S. McMillen, Eau Claire, vice-president in charge of sales, Northern States Power Co., was elected chairman of the Commercial Division, Electric Section, and A. G. Bur, Green Bay, sales manager, Wisconsin Public Service Corporation, vice-chairman.

PERSONALS

A. T. O'NEILL, president of the Buffalo Niagara Electric Corp., has been elected president of the Niagara Falls Power Co., a subsidiary of Buffalo Niagara Electric. In this capacity he succeeds the late Paul A. Schoellkopf.



MR. O'NEILL

Mr. O'Neill became identified with the electric utility business in Central New York 38 years ago and has been associated with the industry in western New York for the past 29 years.

He entered the general practice of law in Syracuse in 1906, and became associated in 1909 with the claims and tax department of the Syracuse Lighting Company, a constituent of the present Central New York Power Corp.

In 1930 he was made claims attorney for the electrical operating companies of the Buffalo, Niagara & Eastern power system, and in 1934 was appointed assistant counsel. He was appointed a vice-president and secretary of the Bradford Electric Co. of Bradford, Pa., then a subsidiary, in 1935, and became its president and a director in 1936. Mr. O'Neill was appointed a vice-president of Buffalo Niagara Electric Corp. in 1942. Three years later he became vice-president and general counsel of Buffalo Niagara & Eastern Power Corp. and its subsidiary companies, to succeed the late Warren Tubbs, with whom he had been associated as assistant counsel for 11 years.

CHARLES H. SCHWANER has been named secretary-treasurer of the Tampa Electric Co., Tampa, Fla., to succeed A. R. HATHAWAY, who was recently appointed treasurer of the Atlanta Gas Light Co. Mr. Schwaner goes to Tampa from Savannah, Ga., where he was treasurer of the Savannah Electric & Power Co.

Announcement has been made of the election of GRANVILLE H. BOURNE as president and W. B. TIPPY and H. J. SCHOLZ as vice-presidents of the Commonwealth & Southern Corp. of New York, service company of the Commonwealth & Southern Corp. system. Mr. Bourne has been comptroller of the Commonwealth & Southern Corp. since 1934 and vice-president and comptroller since 1945. As president he is succeeding JUSTIN R. WHITING, who has been elected chairman of the board.

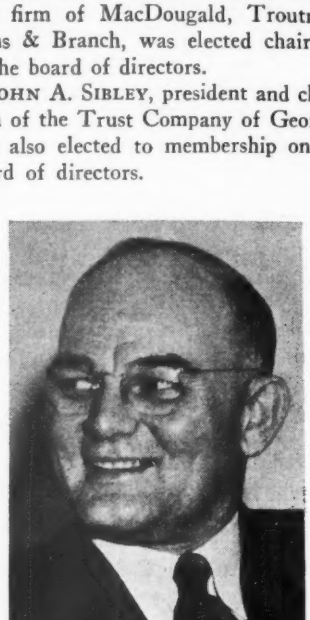
Mr. Bourne entered the employ of Hodenpyl, Walbridge & Co. of New York, public utility operators, in 1906 and continued successively with Hodenpyl, Hardy & Co., Commonwealth Power Railway & Light Co., Allied Power and Light Corp., and with the Commonwealth & Southern Corp. since its organization in 1929. He is also a director of the Commonwealth & Southern Corp. of New York, vice-president and director of the Southern Co., and director of the Southern Indiana Gas & Electric Co., the Consumers Power Co. and the Georgia Power Co.

Mr. Tippy has been on the New York staff of Commonwealth & Southern since 1945. At that time he relinquished his duties as assistant to the division manager of the Pontiac (Mich.) division of Consumers Power Co. to assist Vice-President J. A. Brown with the operations of Consumers Power Co., Central Illinois Light Co. and Southern Indiana Gas & Electric Co. He had been identified with Consumers Power Co. since 1936.

Mr. Scholz has been supervising engineer for Commonwealth & Southern Corp. Service Co., Birmingham, Ala. He joined the engineering staff of the Alabama Power Co. in 1922 and became associated with Commonwealth & Southern in 1931. Mr. Scholz is a fellow of the American Institute of Electrical Engineers.

C. B. MCMANUS, vice-president and director of operations of the Georgia Power Co., has been elected president of the Company succeeding Preston S. Arkwright, Jr., whose death occurred last month in Washington, D. C. DAN MACDOUGALD, senior member of the law firm of MacDougald, Troutman, Sams & Branch, was elected chairman of the board of directors.

JOHN A. SIBLEY, president and chairman of the Trust Company of Georgia, was also elected to membership on the board of directors.



MR. MCMANUS

Mr. McManus has served as vice-president and director of operations of the company and has been a director since 1945.

Mr. MacDougald said that in addition to serving as chairman of the board of the power company he would continue the practice of law as senior member of the law firm of MacDougald, Troutman, Sams & Branch.

Mr. MacDougald was born on a plantation near Columbus, Ga., in 1883, the son of William Alexander and Emily Fitten MacDougald. He was graduated from the University of Georgia in 1910 with a law degree and shortly thereafter opened a law office in Atlanta. In 1914 he became a member of the firm of King and Spalding. During the first World War he enlisted in the field artillery and was discharged with the rank of first lieutenant. In 1935 he joined the law firm of Colquitt, MacDougald, Troutman and Arkwright which subsequently became MacDougald, Troutman, Sams & Branch. For the past 12 years he has been closely associated with the Power Company in the handling of its legal affairs.

Mr. McManus was born in Smithville, Ga., in 1895, the son of Clifford B. and Maggie Wells McManus. After receiving his early education in the pub-

lic schools of Smithville he attended the Alabama Polytechnic Institute at Auburn and was graduated in 1916 with a degree in electrical engineering. Upon finishing college he joined the Westinghouse Co. in Pittsburgh to continue his technical training. He received further specialized training at the General Electric Co. Early in 1918 he joined the U. S. Army and was commissioned a 2nd lieutenant in the Corps of Engineers.

Mr. McManus joined the Georgia Power Co. in 1927 as superintendent of district operations, after spending a number of years in various important maagerial positions in public utility operations. He became assistant operating manager in 1929.

Mr. Sibley, a new director of the company, is widely known as an attorney as well as the chief officer of the Trust Company of Georgia. He joined the firm of King and Spalding, which later became Spalding, MacDougald and Sibley in 1918 and was there associated with the new chairman of the board for a number of years.

The appointment of LELAND TALIAFERRO to be associate general solicitor of Public Service Corp. of New Jersey has been announced by President George H. Blake. Mr. Taliaferro has been with Public Service since 1926 and for several years prior to that was engaged in general law practice in Newark.

A graduate of Rutgers University in 1920 and Columbia University Law School in 1923, Mr. Taliaferro was admitted to the bar in the latter year. He started with Public Service as an attorney, and was made assistant general attorney in 1927. Subsequently, he was an assistant general solicitor and was made an assistant general counsel last year.

Formation of a new electric construction department under the supervision of CARL E. ARVIDSON has been announced by the Consumers Power Co., Jackson, Mich. Some changes in personnel have followed the organization of the new unit. ARTHUR R. HAMILTON, formerly general construction superintendent, plants and substations with the production and transmission department, has become general construction superintendent, generating plants. In the new construction department set-up, EDGAR A. CANNON, who was field electric construction superintendent, becomes general construction superintendent, transmission lines and substations.

Mr. Arvidson, who has just been named general supervisor of electric construction, spent four years (1924-28) with Commonwealth Power Corp. and Stevens & Wood on substation design and construction and as investigations engineer. He then became identified with Consumers Power Co., where he served as power sales engineer for nine years. Before entering the U. S. Navy in 1942 he was connected with the Commonwealth & Southern Corp. at Jackson, Mich., as distribution engineer. Following discharge from the Navy he was made supervisor of investigations section of general engineering department, Consumers Power Co., the position he occupied until his recent promotion.

Mr. Hamilton first went to Consumers in 1924 on construction work. He left in 1932 and returned in 1936. Since that time he has worked on construction of plants and substations and in 1946 was named general construction superintendent to succeed GEORGE F. STECKER, who retired at that time.

Mr. Cannon joined the company in 1928 in the production and transmission construction department at Zilwaukee, Mich. Except for short periods during 1931 and 1932 and during military service in World War II, he has been working ever since on construction jobs in various parts of the Consumers system.

Preston S. Arkwright, Jr.

PRESTON S. ARKWRIGHT, JR., president of the Georgia Power Company since last February, died suddenly on November 6 in a hospital in Washington, D. C., after a blood clot had formed on his lungs. He was 44 years old. He had entered the hospital 10 days before his death after suffering a rupture of the appendix.

MR. ARKWRIGHT

Mr. Arkwright's father was the guiding spirit in building up a coordinated utility system in Atlanta and for many years served as president of the Georgia Power Company and its predecessor companies. At the time of his death late last year, he was chairman of the board.

Mr. Arkwright, Jr., was a native of Atlanta and had been a member of the company's legal staff since 1926 when he was called to the presidency. He attended the Atlanta public schools and Emory University, from which he was graduated with the bachelor of philosophy degree in 1924 and a law degree in 1926. He was admitted to the bar and joined the law firm of Colquitt & Conyers in that year. The firm was later succeeded by Colquitt, Parker, Troutman and Arkwright, and in 1937 by MacDougald, Troutman and Arkwright. He had been a member of the board of directors of the Georgia Power Company since 1939.

Herbert A. Wagner

(*Continued from page* 453)

Union Memorial Hospital and the Children's Hospital School. He was a life member of the American Institute of Electrical Engineers and a former member of the executive committee of the Association of Edison Illuminating Companies. He was a member of the Maryland Club, Baltimore Country Club, The Engineers' Club, the Maryland Jockey Club and the Newcomen Society of England.

He is survived by his wife; a son, Herbert A. Wagner, Jr., and a daughter, Mrs. John P. Zamboni.

Kansas City Power & Light Uses Planned Lighting in Its New Store and Office Building

(*Continued from page* 448)

delivers high intensity light without glare.

In designing the light for the new store, J. M. Arthur, Jr., Manager of the Lighting, Steam and Commercial Service Division of the Kansas City Power & Light Company, said his staff had four principal objectives in mind. These were: high comfort, unchanged or satisfactory color, low depreciation and maintenance costs, and high, though comfortable, light intensities.

Architects for the building were Edward M. Tanner, representing the J. C. Nichols Company, and Homer Neville, of Neville, Sharp & Simon, who worked closely with the lighting engineers, contractors and painters to produce a planned lighting combination tailored for its intended use. Standard equipment was used throughout the new store.

The building is completely air-conditioned, summer and winter, by a 30-ton compressor. A stream of warm air defrosts the glass doors and display windows much as the heater in a car defrosts the windshield. All air in the store is filtered through an electronically-charged cloth that removes 85 to 90 per cent of the dust and dirt from the air.

Continuing scarcities of electrical appliances posed a problem for company officials with an "Open House" arranged at a time when the firm is doing relatively little merchandising. The problem was solved, to apparent customer satisfaction, by assembling five model electric kitchens, one of which is a combination kitchen laundry. None of this equipment will be sold, but was placed on exhibition with a view of giving Plaza customers an opportunity to see and compare the latest kitchen appliances made by eight leading manufacturers.

Unusual color combinations, special lighting effects, photo murals, corner windows and breakfast snack bars are featured in the kitchen plans, no two of which are alike. Each kitchen is designed for maximum economy of space and combines beauty, utility and convenience. A member of the Home Service staff will be on hand at all times to demonstrate the kitchen equipment.

CONVENTIONS AND MEETINGS

1947

DECEMBER

1-2 Prime Movers Committee, EEI, Hotel Traymore, Atlantic City, N. J.
1-5 The American Society of Mechanical Engineers, Chalfonte Haddon Hall, Atlantic City, N. J.
3-5 52nd Annual Congress of American Industry, National Association of Manufacturers, Waldorf-Astoria Hotel, New York, N. Y.
11-12 Pennsylvania Electric Association, Meter Committee, Benjamin Franklin Hotel, Philadelphia, Pa.

1948

JANUARY

12-14 Canadian Electrical Association, Winter Conference, Chateau Frontenac, Quebec, Can.
26-30 American Institute of Electrical Engineers, Pittsburgh, Pa.

FEBRUARY

5-6 Missouri Valley Electric Association, Power Sales Conference, President Hotel, Kansas City, Mo.
9-10 Transmission and Distribution Committee, EEI, New Jefferson Hotel, St. Louis, Mo.
9-10 Prime Movers Committee, EEI, Edgewater Beach Hotel, Chicago, Ill.
9-11 Meter and Service Committee, EEI, Biltmore Hotel, Oklahoma City, Okla.
12-13 Electrical Equipment Committee, EEI, Netherland Plaza Hotel, Cincinnati, Ohio.
16-17 Accident Prevention Committee, EEI, Roosevelt Hotel, Pittsburgh, Pa.
19-20 Pennsylvania Electric Association, Prime Movers Committee, Hotel Alexander, Hagerstown, Md.
19-20 Pennsylvania Electric Association, Electrical Equipment Committee, Castleton Hotel, New Castle, Pa.
19-20 Pennsylvania Electric Association, Systems Operation Committee, Abraham Lincoln Hotel, Reading, Pa.
26-27 Pennsylvania Electric Association, Transmission and Distribution Committee, Castleton Hotel, New Castle, Pa.

MARCH

14-18 National Electrical Manufacturers Association, Edgewater Beach Hotel, Chicago, Ill.

APRIL

5-8 National Association of Corrosion Engineers, Jefferson Hotel, St. Louis, Mo.
6-8 Fourteenth Annual Sales Conference, EEI, Edgewater Beach Hotel, Chicago, Ill.
7-9 Missouri Valley Electric Association, Engineering Conference, President Hotel, Kansas City, Mo.
8-10 Southeastern Electric Exchange, Annual Conference, Boca Raton Club, Boca Raton, Florida.
12-14 National Conference of Electric and Gas Utility Accountants, New Jefferson Hotel, St. Louis, Mo.
19-21 Purchasing and Stores Committee, EEI, Hotel Cleveland, Cleveland, Ohio.
27-29 Chamber of Commerce of the U. S. A., Washington, D. C.
28-30 Missouri Association of Public Utilities, Hotel Jefferson, St. Louis, Mo.

MAY

3-5 Engineering Committees, EEI, Edgewater Beach Hotel, Chicago, Ill.
5-7 Missouri Valley Electric Association, Rural Round Table Discussion and Sales and Rural Conference, President Hotel, Kansas City, Mo.
7-9 Westinghouse Agent-Distributors Association, Hotel Statler, Buffalo, N. Y.
10-13 National Fire Protection Association, Statler Hotel, Washington, D. C.
18-21 National District Heating Association, Hotel Statler, St. Louis, Mo.
24-25 Meter and Service Committee, EEI, Lafayette, Indiana.
27-28 Missouri Valley Electric Association, Accounting Conference, (Place to be determined).

JUNE

1-4 EDISON ELECTRIC INSTITUTE, Annual Convention, Atlantic City, N. J.
16-18 Pacific Coast Electrical Association, Inc., Hotel Fairmont, San Francisco, Cal.

EDISON ELECTRIC INSTITUTE OFFICERS AND COMMITTEES

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(Terms Expiring 1949)

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(Terms Expiring 1950)

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REX I. BROWN.....Mississippi Power & Light Co., Jackson, Miss.
HANCE H. CLELAND.....San Diego Gas & Electric Co., San Diego, Calif.
J. A. LONGLEY.....Central Illinois Light Co., Peoria, Ill.
L. A. MAGRAW.....Central Illinois Public Service Co., Springfield, Ill.
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(Continued)

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